12 November '99

The Age Profile and Future of the OSV Fleet

A Broker's Perspective

INTRODUCTION

Since 1981, Marcon International, Inc. has provided a wide range of consulting and brokerage services to the towing, marine construction and offshore petroleum industries. While our primary focus is sales and charters, we also assist many companies in appraisals, evaluating capital acquisitions, determining market rates and project feasibility.

For the past eighteen years Marcon has published a newsletter which is mailed out to about 9,000 companies worldwide, listing a portion of the 7 - 8000 vessels and barges listed for sale and / or charter. We also produce regular market reports on various segments of the industry. The "printed word" was expanded several years ago to include an internet site at www.marcon.com which is updated weekly.

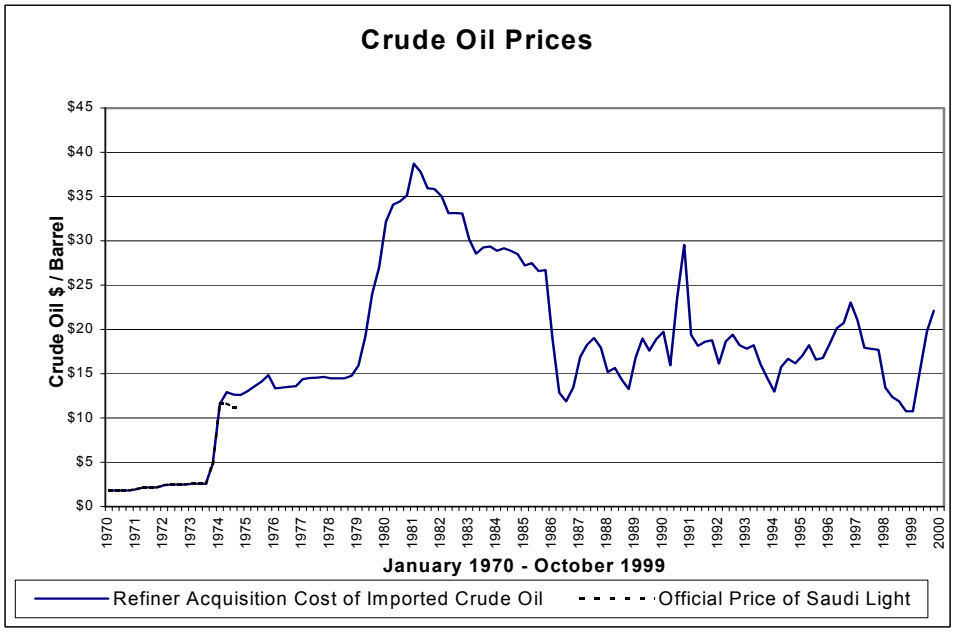
The first supply boat Marcon ever sold was the 1956 built 136' x 36' *"Low Tide"* in 1983 from Tidewater Marine to Honeywell, Inc. of Seattle for conversion to a research platform testing defense projects. Believe it or not, she was powered with twin 500HP direct reversible Enterprise diesels. Imagine today of even allowing a boat with direct reversible engines near a rig. I am happy to say that she is still in the same service today – with the same engines. Only in Seattle could you find someone who loves Enterprises. Since then we have been involved in the sale of about 100 supply boats worldwide.

Many of you already in the trade are only too familiar with the market as it has affected you. It is not just words on paper – many of you have lived it. I am going to start though with a brief history from a broker's perspective because the past still affects our market today.

HIGHLIGHTS

Up until the 80's, many owners regularly put their equipment on the market for sale as it reached 15 – 20 years of age and replaced them with newer or new built vessels. This investment created a gradual and steady renewal of the fleet. I note that one Gulf Coast major operator back then who automatically listed equipment for sale when it reached 15 years now has an average fleet age of about 20 years.

The Gulf of Mexico set the pace in the offshore oil industry since it started and will be remembered both for the boom times of the early 80's and mid-90's. Twenty years ago the support vessel industry was riding on the back of a very buoyant offshore market that was seeing demand escalate rapidly under pressure for increased supplies of domestic oil. Oil prices rose from about $2.00 per barrel (Saudi Light) in 1970 when OPEC began to assert power to about $15 per barrel in 1975. This remained somewhat constant until 1979 and then spiked upwards to 1980 when the cost of imported crude to the refiners peaked at just under $40 per barrel.[1] This gave the industry the confidence to invest in the future and the supply boat market struggled to keep up with demand. Over-capacity was unheard of. Utilization rates would have been over 100% if that were possible. Shipyards could not turn out new vessels fast enough. Offshore Trawlers in Bayou La Batre, Alabama were turning out supply and utility boats at the rate of one every other week.[2] It was almost as if hulls were being built by the mile and just cut off at the appropriate lengths.



Over-optimistic forecasts in the 1970's and the construction boom brought throngs of inexperienced investors in the U.S. with now defunct tax benefits. Many a doctor was convinced that the upward spiral would never end, much like internet stocks today. Some experts were even predicting crude oil prices over $100 a barrel. This resulted in an over-abundance of vessels worldwide in the 80's. Early in 1982 though indications of a world oil glut led to a rapid decline in oil prices with OPEC seeming to lose control. Both the offshore petroleum and towing industries started a long and dramatic "roller coaster" ride.

Too many vessels were chasing too few jobs. Day rates sank lower and lower. Profits disappeared. As fleets were laid up left and right many second-hand boats were sold by owners, banks and the U.S. Maritime Administration for 30 cents on the dollar and less. New construction became a thing of the past.

1986 was perhaps the worst year for the offshore petroleum industry which was ravaged by a rig and support vessel over-supply and oil company restructuring. This was a result of the dramatic slowdown of exploration and development. Average world oil prices fell by over 50%, dipping to just under $9.00 per barrel in July, causing a virtual shutdown of the industry. The marine transportation sector was hit hard. Day rates in the U.S. Gulf for an average 180' supply boat dropped to about $1,250 per day in mid-January '87.[3] Foreign operators were equally affected – especially in the North Sea and West Africa. Companies like the West German operator OSA laid up about 30% of their fleet.[4]

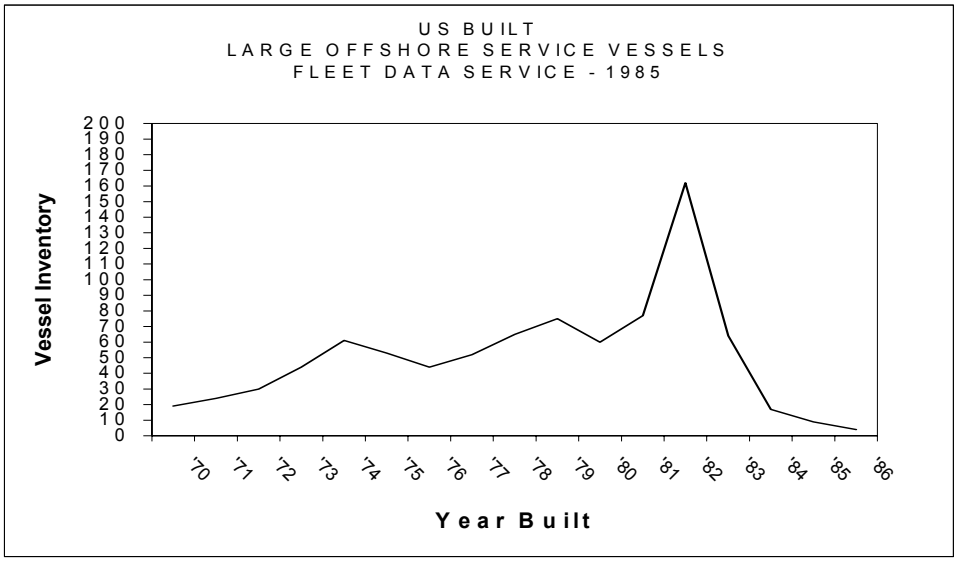
Luckily for many banks and shipyards, the Alaskan fishing industry in the mid to late 80's was beginning to take off. There was a ready source of primarily Norwegian and West Coast buyers shopping for bargains.[5] Over a hundred U.S. built supply boats were sold for conversion to crabbers, processors, longliners and trawlers with Marcon handling sales of about 35. The great number of vessels sold into the fishing fleet and this "feeding frenzy" of fishermen coupled with an increasing optimism in the oil industry caused supply boat prices to "sky rocket". Prices in 1987/88 quadrupled. A 204' eight year old boat sold for only $206,000 at Marshal's Sale in mid-86 while the sister vessel sold for $950,000 two years later. As 1987 came to a close every 165' and 180' boat capable of working was on the job. The surplus of vessels owned by financial institutions began to dry up. Nearly 100% of the operational boats were on charter in the Gulf of Mexico with 30 supply boats remaining "cold stacked" and another 80-90 boats still held by financial institutions and involved in litigation so as to not be available for sale or charter.

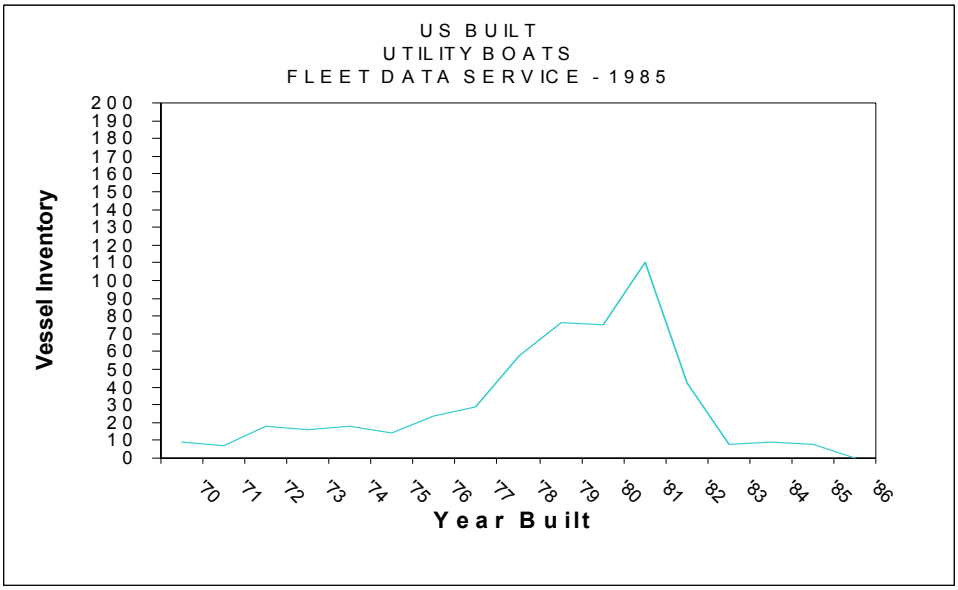
As the domestic supply boat market started to pick in '87, the overseas market stayed flat. But sale prices were improving even there. As only U.S. built supply boats were eligible for conversion to U.S. fisheries, the removal of surplus vessels from the foreign oil patch was not as active. Early '87, a pair of seven year old 8000HP tug supply boats were sold in the Far East for about US$ 950,000 "en-bloc" for the pair. By November of the same year this improved to about US$ 950,000 each. Norwegian Owners upped their prices for newer Ulstein 12,000HP boats to in excess of $7 million each and five year old UT-704's with 8000HP were priced at US$ 2.5-2.8 million. As the decade closed, the purchase of supply boats by fishermen slowed both due to the rise in prices and market saturation, but a few continued to sell on through the early 90's.

With regards to new construction, in the United States supply and tug supply boat deliveries increased from 65 in 1978 to just over double that four years later in 1982. The next year though, this fell to 1978 levels, followed by 17 in '84 and only 9 in '85.[6]

U.S. Owned Offshore Service Vessels [6]

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Supply	15	31	40	49	45	56	72	20	10	3
A/H Supply	1	5	2	8	5	12	18	12	0	1
Tug Supply	28	16	23	18	10	9	42	32	7	5
Utility	24	29	58	76	75	110	42	8	9	8
Crew	27	29	49	47	82	79	35	8	17	1
Total	**95**	**110**	**172**	**198**	**217**	**266**	**209**	**80**	**43**	**18**




US BUILT
UTILITY BOATS
FLEET DATA SERVICE - 1985
Vessel Inventory
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
'70
'71
'72
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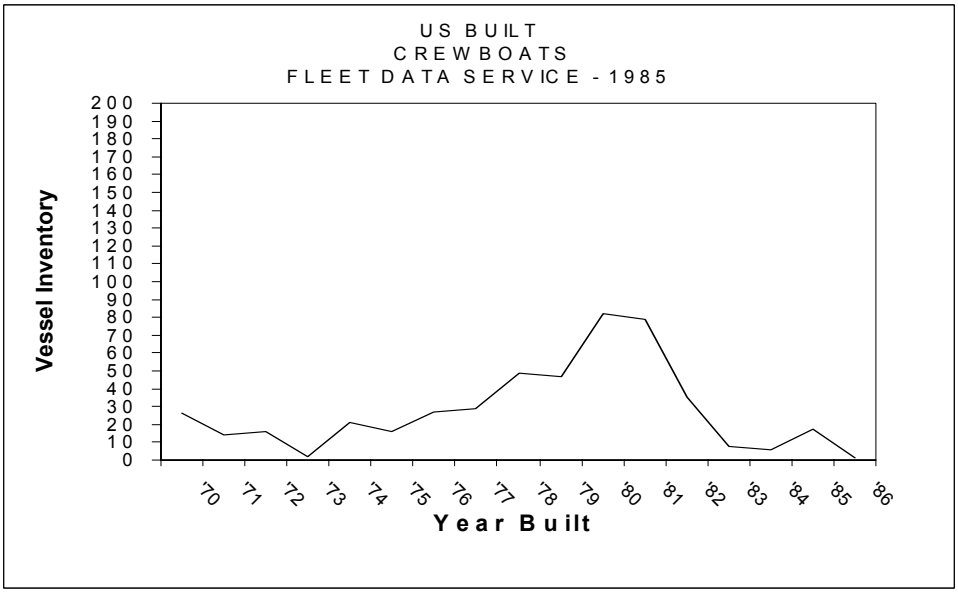
'83
'84
'85
'86
Year Built


US BUILT
CREWBOATS
FLEET DATA SERVICE - 1985
Vessel Inventory
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
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'70
'71
'72
'73
'74
'75
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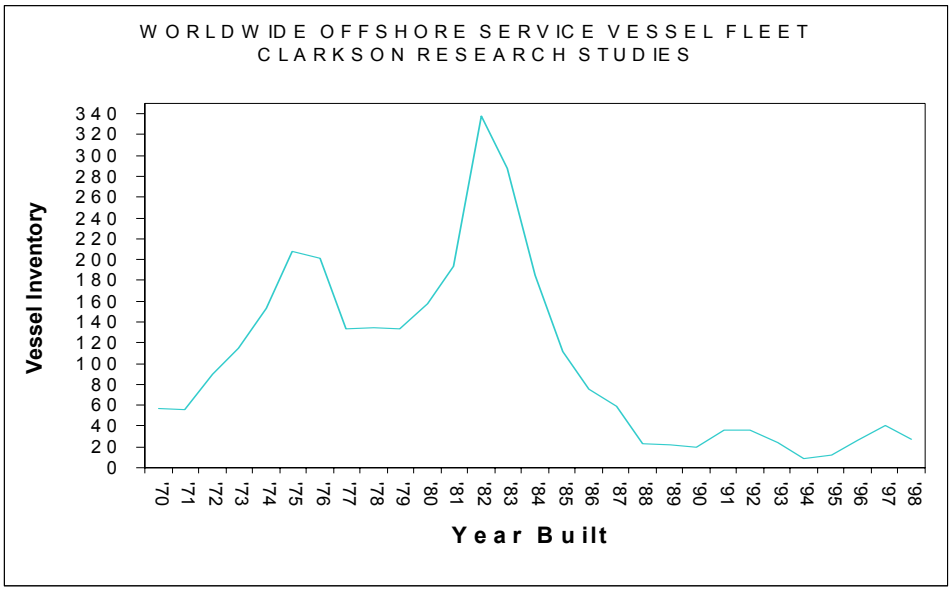
'77
'78
'79
'80
'81
'82
'83
'84
'85
'86
Year Built

Foreign operators were going through the same downturn. Their shipyards also saw newbuildings fall off. Although comparing "apples and oranges" here with other classes of vessels included, a review of the Statistical Tables from Clarkson's Research Studies of London provides a similar picture. 138 offshore service vessels were built in 1978 worldwide including the U.S. This increased to a peak of 338 in 1982, falling to 288 in 1983, 185 in '84 and on down to 75 in 1986.[7] With the slow improvement of day rates and utilization towards the end of 1987, hopes were high and shipyards started at least to think again about new construction in the near future.



Boat companies who survived the hard times were definitely "leaner and meaner" and those bankers and leasing companies who did not decide to run the other direction when approached for a vessel load were tougher on their requirements. This lack of new construction though brought unforeseen problems which will continue to affect us for a number of years to come.

As the market started improving in the late 80's, there was no ready source of newer boats to replace older tonnage and vessels either lost or sold abroad. Almost nothing had been built after 1985, creating a "gap" in fleets worldwide. Utilization, charter rates and revenues continued to improve from the previous decade's slump. A few boats were built in the early 90's for companies like Oil & Gas Services, Kilgore Offshore and Sea Mar Operators, but it wasn't until 1997/98 that Owner confidence and day rates reached levels required to justify newbuildings. Most operators competed for existing tonnage, sometimes on an individual basis, but more often in a spate of merger and acquisition mania.

Supply and demand. This "gap" or scarcity of good second-hand boats caused prices to climb to record levels in 1998, creating an "inflated" book value or "bubble" for older tonnage compared to previous decades. This continues to have a negative affect on the industry today and will do so for the next five to seven years.

These same vessels can show up as “inflated” assets on a company’s books. This can encourage excessive borrowing from lenders who are chasing higher and riskier returns. Publicly traded companies can also appear stronger than they really are to their shareholders who may be willing to pay more for the stock which in itself makes the company look even stronger yet. During periods of low interest rates, borrowers are also able to borrow a bigger multiple of their income to finance expansion and everyone tends to get a false sense of security encouraging them to take bigger risks and lenders to relax their standards. It is all interconnected and a vicious circle difficult to break out of.

Owners with a higher book value on vessels are also more likely to hold on to them longer as they do not want to show any losses – especially companies trading on the stock market. More and more money has to be spent on conversions, maintenance and repair on the older tonnage increasing everyone’s investment and their reluctance to sell unless they can get even higher prices. Remember, though that most of this was done by necessity rather than choice as for many years the revenues vessels were earning did not warrant new construction. The magical level at which newbuilding could start was almost looked forward to as a Holy Grail.

In a stable or buoyant market, this vessel price “bubble” would take care of itself as new vessels gradually came on line. It is a rude awakening though when borrowers are forced to re-adjust finances in a falling market. Both they and their investors may find that the expected fair market value for a 190’ twenty five year old vessel has plummeted and their fleet is no longer worth near what it was when the loans were initially made.

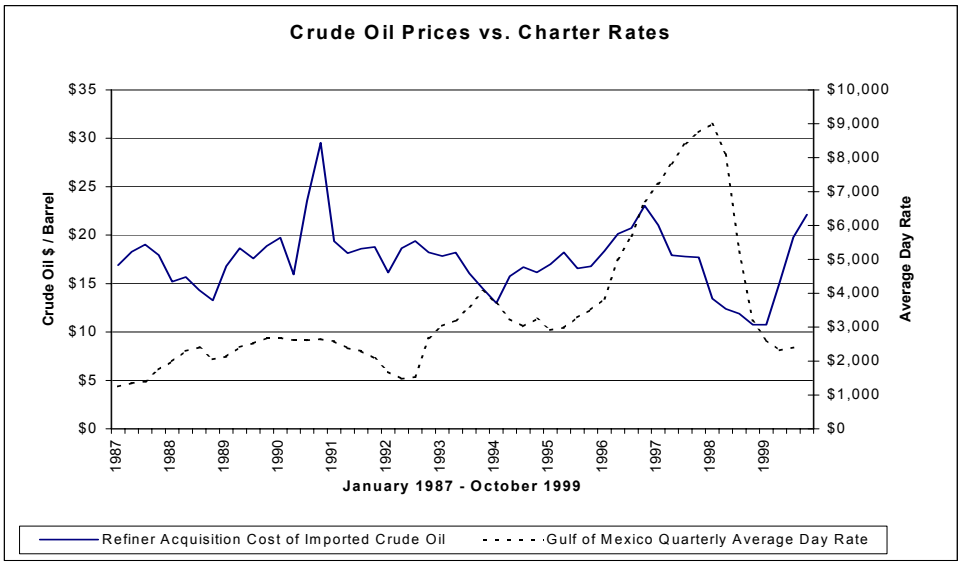
Most lenders were out there actively chasing loans on the upswing of the bubble thinking that when and if the collapse happened they might be safely elsewhere. Some are tempted to take a greater risk than prudent, much like Japanese property prices rising fourfold backed by lenient bank lending between 1981 and 1989. When bubble bursts, it can cause financial harm if a company is over-leveraged and heavily exposed to a fall in asset prices and a recession or in this case a drop in income from their charter rates. Most lenders will try to support a company and it’s bubble in hopes that they will be able to weather the storm until both day rates and values increase so that when the collapse does happen they will not get caught as hard.

TOMORROW – BOOM, BUST OR …..

Drillers, boat operators, shipyards and brokers alike all seem to be hypnotized by the price of oil. Articles are written daily quoting the price and comparing it to some level in the past. Although it is simplistic to predicate everything on just this one value, it is a very important factor. Much like the weather, everyone is talking about it. How stable will crude prices be? A lot depends on how much longer OPEC can curtail production, increasing demand worldwide, any fallout from Y2K and what will happen at the March 2000 OPEC meeting.

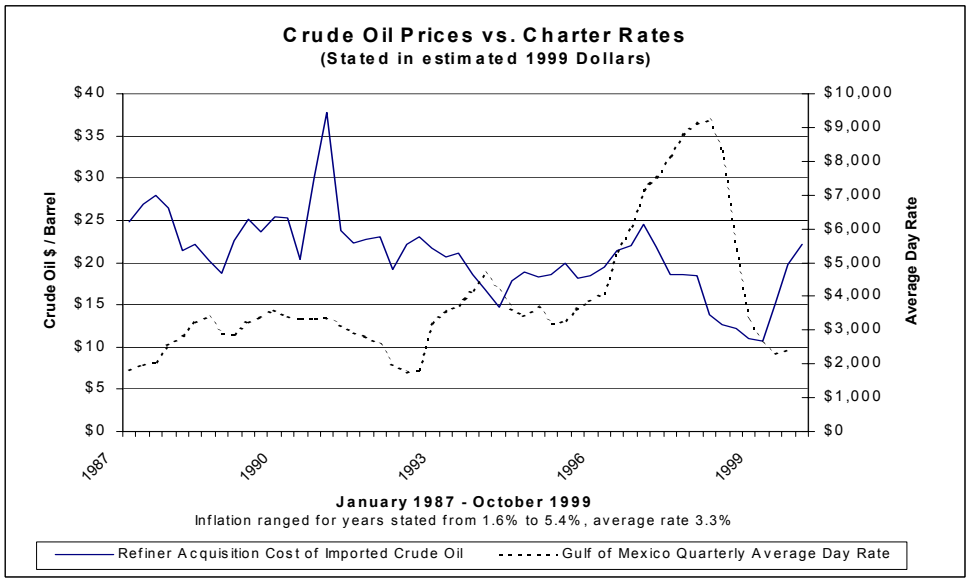
Countless factors are involved in setting the price oil – many of them conflicting. The ever-seemingly fickle supply and demand causes wide swings. We have all seen too many forecasts by “experts” with numbers all over the board plus enough questions and conflicting reports about “glaring errors” and puzzling, inconsistent data on oil inventories and stockpiles in the U.S., Europe and Japan that it is hard keeping track of “who’s on first”. Volatile behavior will continue because of unforeseen political and economic factors, such as tensions in the Mid-East, but these large swings in price are not likely to be sustained long. The market price always seems to correct itself. High real prices deter consumption and encourage competition while low prices have the opposite affect.

In a recent report, the Energy Information Administration (EIA) forecasts world oil prices paid by U.S. refiners for imported crude through 2000 are expected to remain above $20 per barrel, rising to abt. $23.50 in December '99 and January 2000 before declining back to $20 by December 2000.[8] Although we all would enjoy seeing oil staying steady in the mid-$20+ / BBL range, I would also not be surprised to see it either hit $35 per barrel late 2001 or drop back at some time to near $14/BBL. Although I think the first is most likely, I am not necessarily predicting either and just using these prices as an example. Either way, a company has to be prepared for both levels. Expect volatility. Oil companies, drillers, vessel operators and shipyards alike have to constantly factor in both the bonus of a dramatic increase and risk of a sudden price drop.



(Information extracted from Energy Information Administration and Offshore Data Services newsletters)

89



Fourth quarter crude demand is expected to increase. Oil accounts for 40% of world commercial energy supplies and requirements could reach 110 million barrels per day by 2020.[9] In some countries, like Germany, environmental concerns and "Green" politics will likely push the demand for both oil and gas higher as they move away from nuclear power. Nuclear power now provides 29% of Germany's electricity and the government plans to phase out it's use beginning 2002. Gas consumption accounts for only about 20% of the total energy consumption in Germany with 10% of this going towards electricity. This is expected to rise over the next ten years as nuclear power is phased out. The U.S., France and Japan all have greater nuclear capacity than Germany and if concerns with nuclear power grow they could follow the same path.[10]

Experts see the world demand for oil increasing next year by 1.8 million barrels per day subject to continuing recovery in Asia and sustained growth in the U.S. Asian economies are improving, but we should be prepared for a possible devaluation of the Chinese currency starting another round of finance turbulence. Also if the price of oil goes too high this in itself could put downwards pressure on Asia's demand. There already has been some slippage in OPEC compliance with everyone trying to slip in a few more barrels, but in all they have done pretty good this time and Mexico, Venezuela and Saudi Arabia are discussing how to keep oil prices stable after current accords expire.[11]

What's the weather going to be and the demand for heating oil in the U.S.? Cold weather could find a tight oil market over the winter increasing demand up to 200,000BPD.[12] We have had three warmer, although wilder than average, winters which drove down demand for both heating oil and gas. Your guess is as good as mine. The only thing we can be sure if is that we will be facing higher heating oil and gas prices.[13] I myself am preparing for a wetter winter in the Pacific Northwest, but normal temperatures – whatever "normal" may be.

Other factors include continuing political instability as some countries and subdivisions – both oil producers and consumers, look toward their own goals and self-determination. We will always have regional conflicts and a shifting of powers and borders with on one hand continuing fragmentation of some countries and on the other a balance of globalization and regionalization such as in Europe.

Y2K will have some effect, although until it is all over we will not know to what extent. Even with minimum computer problems it will be there. How many of you are going to fill your gas tanks up early and maybe put aside an extra 5 gallon can or two just to be safe. Many corporations will be taking similar precautions and right down the production and distribution line from the refineries to the gas stations supplies will probably be increased before the end of the year. Increased demand for crude will most likely drive the price slightly higher just before the New Year followed by a quick drop in price in January 2000 until the surplus is used up.[14]

Whose crystal ball is accurate? Will we have further slippage in OPEC compliance or different methods of overseeing pricing in the future? Everyone is guessing right now and taking a short term view. At the recent drop of $3 per barrel thousands of words were written and stocks re-analyzed worldwide. In the long term these fluctuations should not matter. We can't continue just to react to short term ups and downs of oil prices firing thousands in one month and a year later wondering where we are going to find qualified and professional employees. It only takes a supply/demand imbalance of less than a half a million barrels a day to shift oil prices a few dollars. A 3% change in supply can cause a swing as large as the price crash of 1998.[15]

All we can do is to expect volatility and just "keep on trucking". Large market swings are common, here to stay and may not show any conceivable regularity. There are too many factors having their effect on the price of oil. It is an industry affected by the environment, technology, finance, international economics, politics, technology and periodically even ego. The external influences are like the "chaos theory" where somewhere in the Amazon a butterfly flaps it's wings and eventually brings down a government[16] and a graph of prices looks more like the fractal patterns of physicists and mathematicians. Look at the stock market. Watching it daily, the market price oscillations seem to be all over the board, but these oscillations in the long run follow slower

moving trend lines much like a ten foot chop riding on top of a six foot swell at sea. Companies have to develop a good risk management strategy keeping this volatility in mind when making financial decisions. Use the peaks and valleys of the multi-fractals to "stress test" policies, but set those policies and growth / newbuilding decisions on a flat and achievable daily rate that makes sense. It's just a case of being prepared for whatever the market throws at you instead of just reacting to the quick changes, letting go many good employees during the down periods and fighting to get them back during the good.[17]

With the oil price now above $20/BBL major oil companies are increasing exploration budgets for 2000 by 10 – 15%. Credit Suisse First Boston analysts see offshore rig utilization exceeding 90% in 2001 with day rates to climb when utilization reaches 85%+ possibly in late 2000, although a warm winter could push this back six months.[18] A study by Spears and Associates of Tulsa, Oklahoma says oil and gas companies plan to increase E&P budgets to over $67 billion in 2000 with drilling activity in North America to increase 20-35% due to a strong gas market.[19] Most of this discussion has been about the price per barrel of oil, but natural gas prices are also a factor with this market looking strong for 2000. Prices could hit $3.00/mcf in 2000 after averaging about $2.25/mcf for the past three years if we get a cold winter. U.S. demand could also increase 7% in 2000 if the economy continues healthy. As a couple of times before, it has been a strong gas market vs. just the price of oil which helped us out of a slump.

A lot of corporate relationships have been crossing national borders especially after this latest spate in mergers and consolidation in both oil and drilling companies which should improve efficiencies and cost savings. Many drilling contractors are also better capitalized than they were in the 80's as they used the previous recovery to strengthen their balance sheet. Even one driller who gambled heavily on the future by major expansion may come out of it in good shape, although I am sure that there have been many sleepless nights.

There will be further expansion into deepwater with drilling planned or on-going in most areas of the world. 93 fields are being studied or planned in waters over 1,500' to 7500'+ not only in the Gulf of Mexico and Brazil, who is opening up to companies other than Petrobras for the first time, but also West Africa, Australia, Trinidad & Tobago, Ireland, etc. 59% of the deepwater discoveries are presently in the Gulf of Mexico, followed by Brazil with 22% and West Africa coming in third with 19%. West Africa though is in the long-run likely to end up with one third of the deepwater fields in 1000' of water or greater going on stream between now and 2007.[20] As long as the price of oil stays between $18 and $22 per barrel, these deepwater regions should continue to develop.[21] Utilization for deepwater rigs is now 91% and could reach 98% by the end of the year with 100% utilization a possibility by summer 2000.[86]

I believe operators have seen earnings bottom out in this last quarter, but they are still a long way from the next high. Although there will be continuing ups & downs, I expect a slow improvement in oil prices, charter rates and utilization through 2000 with most new construction delayed until after 2001. The geophysical market will also remain weak until we see more stability to long-term oil prices. In the down cycles, seismic vessels tend to be among the first off the payroll and the last to re-enter service.

NEWBUILDING SCHEDULE

Winston Churchill, after trying unsuccessfully to predict the future, commented something along the lines that the future was only just one damned thing coming after another damned thing. I cannot accurately predict the future, but my idea of preparing for it is that you can't stand still. A operator has to move forward and improve both their company and fleet, but still be ready for that one damned thing after another.

It will take some time to re-start any extensive newbuilding. I do not expect a turn-around tomorrow. Even with both rig and boat utilization improving into 2000, I doubt that day rates will increase very much above current levels until we have a sustained period of good utilization. Cold-stacked boats have first to be winnowed out by putting them back to work or selling into non-competing markets. Sadly the Alaskan fishing fleet is not here today to help. We are lucky that the industry did not hit the lows of '86. Even with this last downturn, the majority of boat operators, although hurting, are still in fairly good shape and well positioned for the future. Bottom lines were breached, boats laid up and people laid off, but most of the companies which did not get over-leveraged in the upswing of the last five years are still there in one piece.

Wisdom from one publicly traded major operator says that you need about $1,000 a day charter hire for every $1 million in construction costs plus about 95% utilization over a 25 year economic life of a vessel to earn 12-15% return on investment.[22] Privately held companies who do not have to worry about their image on Wall Street and can accept the risk and lower rate of return may start building again though when the rates are close to half or 2/3rds this level.

In any case, assuming an $8 – 10 million price tag to build an unsophisticated "next generation" boat to replace the standard 180's of today, an Owner will probably need steady rates in excess of $6,000/day before committing to newbuilding. We may have to wait until 2001 or 2002. As rates stabilize at $3 - 4,000 we will again first see more operators refurbishing, stretching and/or repowering older tonnage to increase capacities, lengthen life spans and in some cases improve maneuverability by adding thrusters or changing out propulsion systems. We probably will see a juggling around of some fleets, with "cash rich" companies on the look-out for attractive purchases of newer vessels or even occasionally older units if the price is right and they fit a specific need.

It is a fact of life that faced with lower projected charter rates for 2000 and early 2001, many operators and their customers will have to make do with existing old boats, trying to extend life expectancies to 25, 30 and sometimes out to 35 years. Many of these boats may have high book values and would already have had a lot of money spent on them during the "good times" due to the "gap" in newer tonnage. Owners will try to wring the maximum use out of them – even possibly more than usual due to higher book values caused by the "bubble" discussed earlier. Maintenance and repair costs will still continue to rise and boats will be out of service for progressively longer periods of time for their certification inspections. Some can be kept afloat and working for 40 - 50 years, but why? Except in special cases it does not make sense. Maintenance is usually one of the first things to suffer during periods of low revenues and will have to be taken into account as boats are pulled out of lay-up to go back to work. One shipyard, Conrad Industries, estimates that about 77% of the OSV fleet will require drydocking in the next 12 months.[23]

In the next few years, operators will no doubt look to oil companies for charter commitments prior to building. We believe that regardless of the price of oil, rates and commitments, those Owners who can afford it should "bite the bullet" and set aside a small portion of their capital reserves to start a regular replacement program over the next 10 – 15 years. Timing to sell off and replace a boat would not be determined by any specific age., but on a case-by-case basis dependent on the company's financial situation, contracts, cash flow and the specific condition of the vessel(s) themselves.

Boats built in the 60's, 70's and 80's were built only for a 15 to maximum 20 years of economic life. We are there now. They require constant steel work in ballast tanks, around keel coolers, lazarettes, chain lockers, etc. Regardless of book value or money previously spent, some boats should phased out of active fleets unless they can pay back the required maintenance and repair costs within a specific and short time period. Some owners may even have to accept a loss on their books to see them go and not come back as non-competitors are unlikely to pay top dollar for these "leftovers". Few boats and only the real "dogs" may end up being scrapped as they become too much of a liability to even store. Many companies, especially those

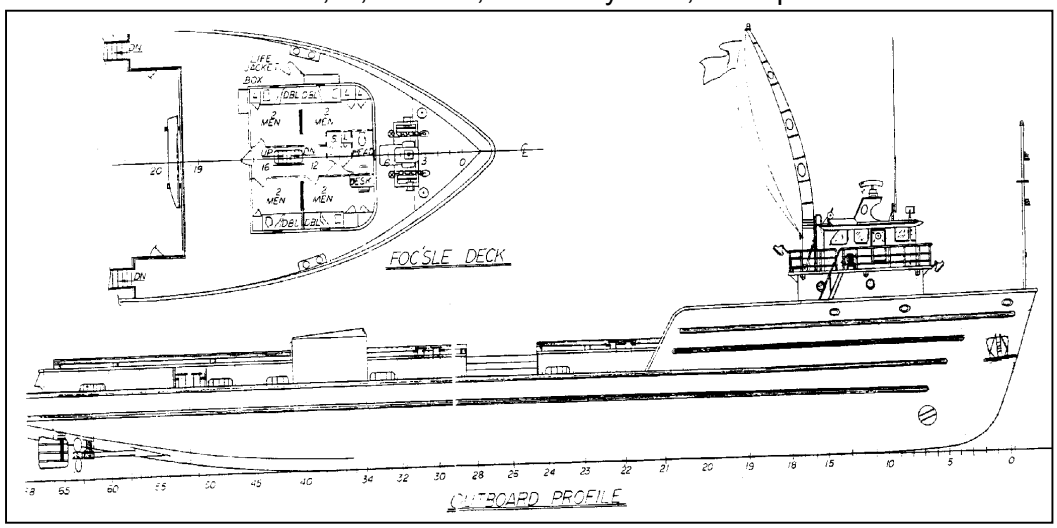
publicly traded, will have to tread carefully as they do not wish to scare away stockholders by showing further losses from these sales no matter how practical it may be otherwise.

When a gradual replacement plan is adopted, I do not expect to see any mass sell off of older boats. I would be surprised to see more than 5 – 7% of the fleet replaced annually – unless we are lucky enough to see another "boom".

EVOLUTION OF BOATS – WHAT WILL BE BUILT

The offshore oil industry began in the Gulf of Mexico with designs that came out of that area. We started out with self-propelled barges and converted fishing boats which evolved "up" while many North Sea designers took their experience from large ships and designed "down", each coming up with a vessel style which matched the specific requirements of the operating area. U.S. yards built a good, basic boat which many overseas felt too simplified, but these boats though were as close to being "sailor proof" as possible and are still working and preferred in many parts of the world.

The early standard was 165' x 38' straight supply boat with CAT D398's, 399's or GM's, a deadweight of only around 700 – 850 tons, 2,000 – 3,000cft dry bulk, no liquid mud and no bow thrusters – at least at first. Internal coatings were minimal. These were built at a time when operators like Tidewater would order boats by the dozen and once as many as 25 in a single contract. Although definitely getting "long in the tooth", you still find these boats working today throughout the world both in the oil fields and in alternate services. They are almost the Volkswagen of the industry.

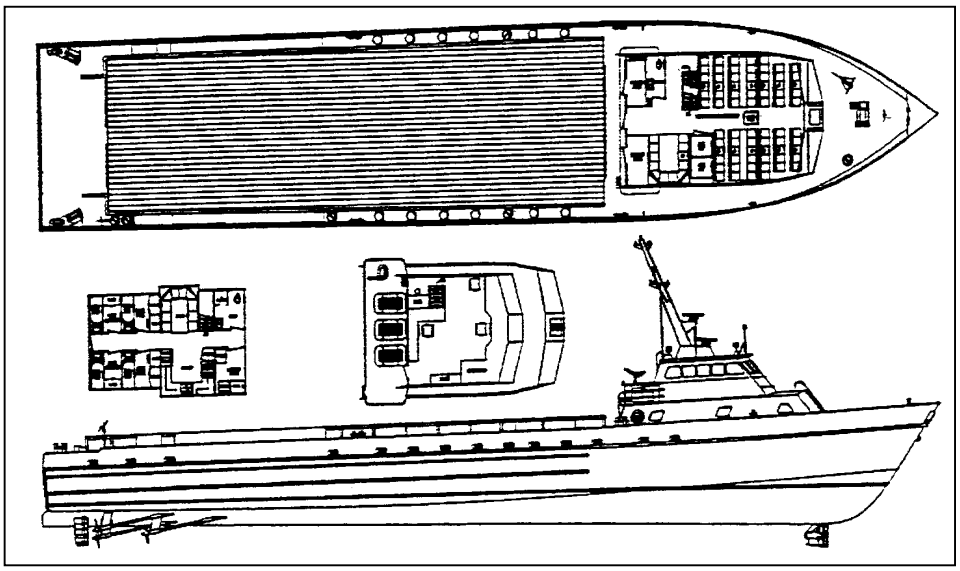


A natural progression was the 1,800 – 3,000HP, 180' x 38' hull, which later expanded to 40' and sometimes wider. This provided a deadweight capacity of 900 – 1,200 tons, 4,000cft dry bulk with liquid mud tanks built in later hulls or since retrofitted to earlier boats. Most were built with bow thrusters, but other than that there was no real increase in maneuverability over the earlier 165 footers.

The 220' boats built by Trinity for Oil & Gas Rentals in 1990 virtually doubled the capacities of a standard 180 footer. These evolved further to the present late 90's generation boats of 220 - 240' by up to 56' beam boats with deadweights approaching 3,000 tons, 8,000cft dry bulk and 4,000BBL liquid mud. Now we are starting to see improved maneuverability with 360 degree azimuthing drives aft, dynamic positioning, joy sticks and better designed rudder & steering systems. Faster, more automated cargo discharge and tank monitoring & valve control systems are also starting to become standard.

What will be next? I believe the 140 – 150' utility boats built over the last couple of years turned out to be a profitable investment for many owners working in shallow water. I expect to see more of these being built, up to 160' – 170' in length, increased deck areas for their length and 1,500 – 2,400HP – much like an improved version of the 165' boat of the 60's and 70's. These will likely replace many 110 – 120' utility boats and bridge the gap between these and the soon to be standard 220 footer.

The large, high-speed crew/supply boats have been popular with boats being built up to 185'. Will these get much bigger? Probably the best way to ensure an immediate order for a 200' or 205' high-speed crew/supplier is for me to say "no". There could be larger sizes ordered in the future, but I doubt that they will get very much bigger using conventional hull forms and propulsion. If the price of oil and charter rates stay "up" for the next five years, I would not be surprised to see continuing experimentation into other non-traditional designs even with a traditionally conservative industry.



Most newbuildings of the future will be "bread and butter", simple platform supply vessels with relatively lower price tags, but as exploration moves further into deep water and more hostile environments we will still need bigger boats to meet this challenge. I expect to see at least one ultra-high horsepower deepwater AHTS over 25,000HP built in a U.S. shipyard within the next five years along with several specialized dive support vessels to handle ultra-deepwater ROV's capable of working in the 10 - 12,000' water depths.

Key improvements which most operators will look for are larger capacities and more maneuverability. In addition, need boats that are simple and "cheap" in the spirit of the old 165 footers. An owner needs to get a decent return, which will allow him to replace his older tonnage sooner plus have a boat with an increased economic life span of 20 / 25 years compared to the 15 year life of earlier boats.

Only problem is that all the added improvements cost money, which has to be paid for in the day rate. Charterers always want the "goodies", but are they willing to pay an extra thousand or two dollars in day rates to get them? As always, everything is a compromise.

Boat operators will always need to provide flexibility to the customer. Some owners go the way of more multi-purpose boats while other owners will opt for providing two different and less complex units. Each owner will have his own thoughts and direction on this issue and their particular fleet mix.

I do not expect to see any radical design changes over the next ten years. There will definitely be improved controls on emissions and better navigation, control and monitoring equipment. We may see even more diesel electric propulsion coming back as technology advances and improves, such as the MT-6000 class platform supply vessels built earlier this year for Simon Mokster Shipping.[24] Here's a technology which neither seems to disappear completely nor yet take over from conventional propulsion.

Aside from the OSV market, considering the fact that heavy lift / crane ships in many fleets are over 30 years of age, I believe that we will see several of these built up to the 4-5,000 ton lift range within the next five years most likely in Far Eastern yards.

We've seen some non-traditional craft used in the past from catamaran tugs to hovercrafts and SWATH's and hope that someone will always step forward to take a risk to try new ideas.

SUMMARY

In general, we expect crude oil prices to continue in the low-mid $20/barrel through 2000 assuming OPEC continues their reasonable compliance of their production quotes. Day rates for OSV's should continue to improve slightly through mid-2000 first in the U.S. Gulf and followed slightly by the Far East, West Africa and Brazil. The North Sea and Mid-East will probably stay somewhat flat until the end of 2000 except for some improvement offshore India.

As the day rates improve, more cold-stacked vessels will come back into service requiring additional maintenance and drydocking. This will be followed initially by conversions and upgrades of existing tonnage and later by more newbuildings.

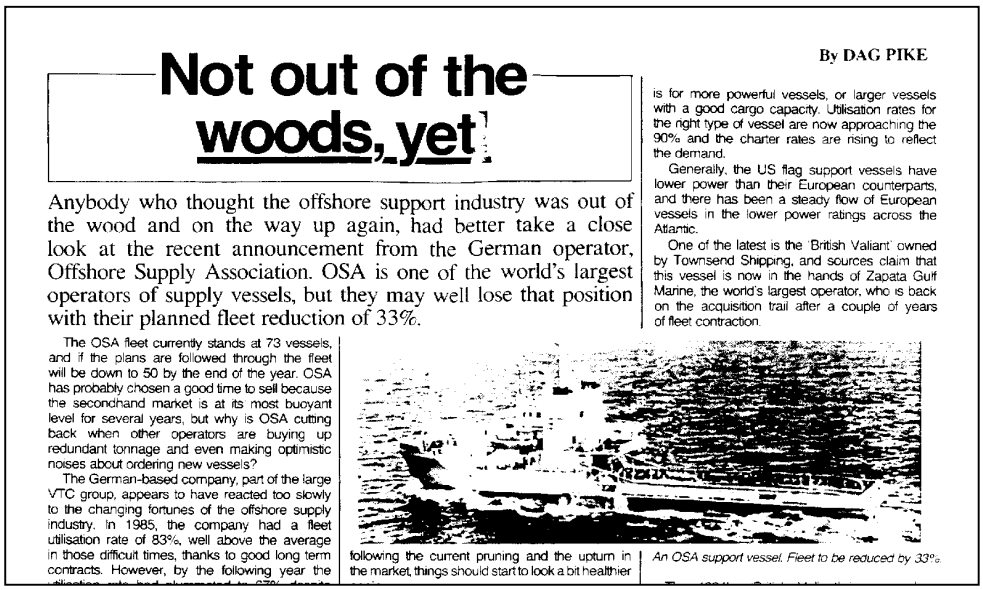
Although mergers and acquisitions will continue and some fleets operating today may not be around as independent entities in 2010, small operators will continue to be vital to the health of the industry. They often focus on niches, can make smaller, more strategic and sometimes riskier acquisitions plus provide competition which keeps the big players in check.

A recent editorial by Leonard Le Blanc in "Offshore" discussed the "eternal squabble" over contract terms and rates of mobile drilling rigs as charter rates tried to track the always moving price of oil. Supply boat operators face the same problem and as usual there is no easy answer. There could be more equipment pools and UPS/FedEx style delivery of supplies to the rigs vs. dedicated boats, but even with the disruptive market swings we see no major change in vessel operations. There is no magic solution. All of us, including brokers, have to continually be flexible, lean and look towards what is best for the long-term.

HISTORY

The following history is only to give a "flavor" for the period and does not include every boat built or transaction.

As we came out of the 80's, operators were thinking of other ways than building to expand. 1986 began "consolidation" mania in supply boat fleets with the merger of Seahorse, Inc.[3] with Zapata Gulf Marine in the U.S. plus Wilhelmsen Offshore and Stad Seaforth Shipping in Norway merging to form Offshore Support Services - hoping that the new group would be well placed to weather the market downturn [5].



Not out of the woods, yet

By DAG PIKE

Anybody who thought the offshore support industry was out of the wood and on the way up again, had better take a close look at the recent announcement from the German operator, Offshore Supply Association. OSA is one of the world's largest operators of supply vessels, but they may well lose that position with their planned fleet reduction of 33%.

The OSA fleet currently stands at 73 vessels, and if the plans are followed through the fleet will be down to 50 by the end of the year. OSA has probably chosen a good time to sell because the secondhand market is at its most buoyant level for several years, but why is OSA cutting back when other operators are buying up redundant tonnage and even making optimistic noises about ordering new vessels?

The German-based company, part of the large VTC group, appears to have reacted too slowly to the changing fortunes of the offshore supply industry. In 1985, the company had a fleet utilisation rate of 83%, well above the average in those difficult times, thanks to good long term contracts. However, by the following year the

following the current pruning and the upturn in the market, things should start to look a bit healthier

is for more powerful vessels, or larger vessels with a good cargo capacity. Utilisation rates for the right type of vessel are now approaching the 90% and the charter rates are rising to reflect the demand.

Generally, the US flag support vessels have lower power than their European counterparts, and there has been a steady flow of European vessels in the lower power ratings across the Atlantic.

One of the latest is the 'British Valiant' owned by Townsend Shipping, and sources claim that this vessel is now in the hands of Zapata Gulf Marine, the world's largest operator, who is back on the acquisition trail after a couple of years of fleet contraction.

An OSA support vessel. Fleet to be reduced by 33%.

Early 1988, an appropriately titled article was headlined *"Not out of the Woods Yet".* This covered OSA's intention to reduce their fleet by 33%, flee from German registry to flags of convenience and cut investment to about 27% of 1985 figures, even though other operators felt things were looking up.[25] In the U.S. Gulf, both rig utilization and the number of workboats on charter continued to improve and both major and independent oil companies expressed concern that not enough workboats would be available to support exploration over the summer months.

As the market improved and there were few newbuildings, operators started to compete for existing vessels which had been built before the slump. In April 1988, Ensco Marine purchased 4 anchor handlers and 10 supply boats from Golden Gulf Offshore for $64 million in cash and stock. Even the Maritime Administration was forced to pay premium prices to obtain custody of six former Leam Transportation 180' supply boats at auction in Beaumont, Texas when bidding opened at $500,000 for each boat and prices quickly bid up to a record of $1.175 to 1.65 million each.[26] OPEC reached a production accord in November with a six month agreement to set production at 18.5 million barrels/day. Although the most recent OPEC quota had been 19.0 million BPD, actual OPEC production was closer to 21 million barrels.[1]

Winter storms did little to dampen the buoyant North Sea market, but beginning 1989 the fragile Gulf of Mexico was again at risk as drilling and construction slowed. Discounting the still large cold-stacked U.S. fleet, overall utilization was 94.2% for supply boats with liquid mud, 83.3% for straight supply boats and 85 - 90% for the fleet of 39 anchor handling tug suppliers. Day rates softened somewhat from the earlier plateau of $2,500 – 2,600 per day. While some owners continued to try and hold a firm line on rates, others were bidding and being awarded contracts at $2,100 a day for a 180' supply boat. Operators began looking for alternatives to the "oil patch" and Ensco removed tow winches from two of their big 230' boats and started hauling containers. This changed as early summer approached with virtually no boats available for charter. Rates again hit $2,400 - 2,500 and then slowly moved to $2,700 per day, which was a significant improvement of the average $1,900 the previous April.[27] In June, OPEC raised their production ceiling to 19.5 MMB/D.[1]

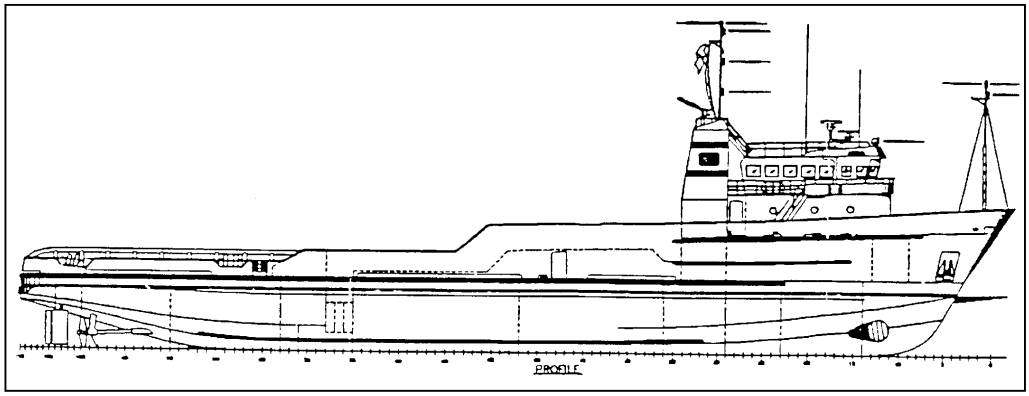
Demand for boats was so strong in July and August '89 that several drilling programs were temporarily delayed until a boat was available to provide support services. There were even whispers about several owners considering building new boats – especially special purpose vessels to support deepwater operations. The feeling though was that day rates would have to be in the mid-$3,000 range or higher with long term charters in

hand to justify new construction. Boat operators and financial institutions were still licking their wounds from the last newbuilding cycle and saying that this was a scenario that *they would not repeat*.[28]

In November 1989, a newcomer on the block entered the fray when Hvide formed a new affiliate called Seabulk Offshore, Limited; purchasing and completely refurbishing the six ex-Leam Transportation boats from Marad's mothball fleet.[29]

During the Winter of 1989 / 90, rising day rates and utilization continued to put the fizz back into the support market. A strong spurt in drilling activities in the Gulf of Mexico increased the demand for boats and helped push rates to $2,700 – 2,900 with some lucky owners even commanding $3,000 per day and higher. There were still foreclosed vessels stacked up with Marad either holding or about to foreclose on about 42.[28]

In January 1990, Hornbeck Offshore signed an agreement to acquire the majority of stock in Point Marine's 13 vessel fleet for about $33 million including assumption of $18 million in debts which almost doubled their fleet.[30] As the 90's began, new construction in the United States was still at a virtual standstill, although Norwegians such as Farstad, Viking and Edda jumped back in with new and larger platform supply vessels and pipe carriers.[31] In August, Iraq invaded Kuwait and crude and product prices temporarily soared. Prices for Brent Crude reached a high of more than $40/bbl in August 1990, double levels of a few months, before plummeting in January '91 from $30.20/bbl to $19.70.[32] Through Fall 1990, rates in the U.S. Gulf hovered around $3,000 per day with most vessels on "term" charters.



Domestic operators started to get their feet wet again by placing the first supply boat orders since the downturn. Although many hoped for a rush of new orders, the market was still not strong enough. Oil & Gas Services of Morgan City, Louisiana was the first to move ahead with Trinity by building three new generation 220' supply boats at excess of $5 million each. Although an ordering frenzy continued in the North Sea with nearly 25 newbuildings in British and Norwegian yards and many builders hoped that large owners such as Tidewater or Zapata would jump on the bandwagon, the fever had not yet struck in the Gulf. No other large U.S. companies placed orders, but several smaller owners reached deep into their pockets. Kilgore Offshore of Houston followed Oil & Gas's lead, ordering one 202' boat with options for three more and Leevac delivered one new 200' boat to Sea Mar Operators which had been started originally in 1982.[33]

Consolidation and shuffling around of the players and their fleets was still preferred over building as Ensco acquired 20 boats from Argosy Offshore, which had been a joint venture of Chevron and a Norwegian group. Offshore Logistics also sold their marine assets to Gulf Applied Technologies with Shearson Lehman Bros. as a major stockholder and two Cal Dive International management employees together with Merrill Lynch Interfunding, Inc. completed the purchase of Cal Dive from Diversified Energies. Hornbeck's fleet also continued to grow with their purchase of four boats from Garber Brothers.[33]

In March 1991, OPEC announced a production cut to 22.3 MMB/D and Gorbachev said the Soviet Union would cut it's exports by half and later in the year suspended petroleum product exports completely as its own fuel shortages grew.[1]

Up's and down's in the U.S. continued with lower day rates and utilization striking again in 1991. As many areas of the world finally started to see an upturn a number of traditional U.S. operators began to look to Southeast Asia. The difference could still be seen in a surge of new orders in 1991 and '92 in the North Sea compared to only six or so in the Gulf of Mexico. In Europe, Norwegian shipowner Stavanger Tank secured options for six additional vessels to be built in Poland, Saevik Supply ordered four 4370dwt anchor handlers from Yugoslavia and Farstad took delivery of a second 14,000HP vessel from Simek in Aalesund, Norway. *"Far Sky"* was to be the second of their four vessel order, but Farstad cancelled half its order signaling that too many newbuildings could affect the health of the industry.[34] Taking advantage of new regulations and the improving market Vector Offshore and Seacor shifted ten vessels out of the Gulf to the North Sea standby/safety market.

The number of fleets continued to shrink. In one of the biggest acquisitions of fleets, Tidewater took over Zapata Gulf Marine, becoming the largest owner of offshore support vessels with 575 boats in 1992. Hornbeck Offshore also bought 20 supply boats and a utility boat from Petrol Marine, becoming number two in the U.S. Gulf behind Tidewater with 52 domestic boats.[35] Rates and utilization continued to improve due to surplus fourth quarter funds available plus an upswing in natural gas prices even before Hurricane Andrew struck requiring more boats to support repairs. November brought the highest rig utilization of 66.9% since late December 1990. Most "hot-stacked" boats that were idle all spring and summer were now working with "spot" rates hitting as high as $3,000/day. Even with this improvement, operators continued to look abroad for lucrative employment with Ensco moving six boats to Southeast Asia and Tidewater renewing contracts in Alaska to escort tankers and provide emergency oil spill response. The domestic fleet itself shrank with Marcon alone selling three 166' operating supply boats to Mexico, a 192' "mothballed" boat to Egypt and a 185' boat to Arabian Gulf buyers.[36]

Demand for newer tonnage built within the last 10 years and the fact that few vessels were built during the mid-80's was increasing values of more modern tonnage. We were daily receiving inquiries looking for that magic boat "built within the last ten years" while the overall age of the total U.S. flag fleet was at 19 years. Domestic Owners were starting to look forward to a future shortage of vessels and again seriously considering construction as an viable alternative to refurbishing old tonnage or bringing vessels back from overseas.

Age Analysis of the World Offshore Service Vessel Fleet
Number of Vessels As of 1994 [37]

	Before 1979	79-83	84-88	1989	1990	1991	1992	1993	Total
AHTS	488	384	219	6	7	8	9	6	1,129
AHT	248	42	18	-	-	2	-	1	311
Crewboat	38	44	29	2	3	1	1	-	118 *
Dive Support	51	24	15	1	1	-	-	-	92
Gravel/Stone Discharge	7	1	2	-	-	-	-	-	10
Crane Ship	5	1	5	2	-	-	-	-	13
Deck Cargo Carrier	-	9	3	-	-	-	-	-	12
Maintenance	29	23	3	-	-	2	1	-	58
Mooring	2	9	4	1	-	-	-	-	16
Multipurpose	7	7	8	-	-	-	-	1	23
Oilwell Service	20	11	7	-	-	-	1	-	39
Platform Supply	39	41	12	-	3	6	6	1	108
Pipe Layer	8	4	-	-	-	1	-	-	13
PollutionControl	1	2	2	-	-	-	-	-	5
ROV Support	13	3	1	-	-	-	-	-	17
Standby/Rescue	157	41	7	-	-	1	6	1	213
Supply	259	313	55	3	4	7	1	-	642
Survey	139	65	31	3	-	5	2	7	252
Utility/Workboat	36	90	22	3	1	1	4	-	157 *
Total	**1,547**	**1,114**	**443**	**23**	**19**	**34**	**31**	**17**	**3,228**

Average Age Analysis of the Major National Fleets As of 1994 [37]

	USA	Pan.	UK	Van.	Nor.	Spore	India	St.V.	UAE	Bah
AHTS	15.3	18.2	14.5	15.4	10.7	12.9	9.9	15.8	20.3	16.5
AHT	19.7	17.9	16.5	21.4	16.0	17.7	12.0	17.3	14.4	15.4
Crewboat	15.9	13.9	-	21.0	-	12.3	-	12.0	-	-
Dive Support	22.1	27.7	18.0	15.0	17.5	16.5	12.3	31.0	18.5	10.6
Gravel/Stone	-	-	-	-	16.0	-	-	-	-	-
Crane Ship	-	20.5	-	29.0	16.0	-	-	-	34.0	-
Deck Cargo	-	-	-	-	-	-	-	-	-	-
Maintenance	30.0	17.3	-	18.4	-	21.7	-	11.0	14.3	-
Mooring	10.0	12.8	12.5	11.2	-	-	-	15.0	-	-
Multipurpose	-	18.0	13.2	-	12.0	-	10.5	-	-	13.5
Oilwell Service	21.6	16.7	-	16.0	11.0	-	8.0	-	19.3	16.7
Platform Supply	-	20.0	13.1	-	8.5	15.5	-	18.5	-	14.2
Pipe Layer	-	29.6	-	37.0	-	-	-	-	-	13.5
PollutionControl	10.0	-	18.5	-	-	-	-	-	-	-
ROV Support	18.0	17.0	15.0	26.0	23.0	-	-	-	-	22.0
Standby/Rescue	14.5	28.0	20.7	21.0	35.4	13.4	-	30.1	-	16.1
Supply	15.0	20.3	13.8	16.7	20.3	12.8	18.0	18.7	15.0	20.0
Survey	18.7	16.1	29.4	13.3	17.5	20.0	11.0	26.8	12.0	20.5
Utility/Workboat	18.8	14.3	-	14.0	-	10.7	-	13.0	15.3	-
Total	17.7	19.3	16.8	19.7	17.0	15.3	11.7	19.0	18.1	16.3

- Note that Clarkson Research Studies do not seem to follow the U.S. built crewboats or utility boats as closely as foreign or other types of vessels – probably because many are under 100GRT. Barges such as crane, maintenance and pipelay are also not covered.

During October 1992, OPEC production reached the highest level in more than a decade at 25.25 MMB/D followed in July '93 by a plunge in prices on speculation that Iraq would receive approval to resume exports. In November, a combination of OPEC over-production, surging North Sea output and weak demand lowered the price of Brent to near $15 per barrel.[1] Instead of moving boats overseas, some Gulf operators felt it easier to continue their acquisitions, but on an international basis. In 1993 Hornbeck acquired Ravensworth Investment Ltd. and moved into the North Sea. During Spring '94 they also signed a letter of intent to acquire Trico Marine's 16 supply boats and 22 crewboats in the Gulf, but this deal was never concluded. Some small operators, tired of the insecurity of the industry, were looking at this being a good time to get out with at least a little profit and seemed to be positioning themselves for takeover. Others like Aries continued to grow by refitting older tonnage and purchased three boats from Hornbeck through Marcon. In April, oil prices again firmed on the strength of institutions shifting U.S. investment funds from equity and bond markets to cash and commodities.[1]

Hornbeck itself was considered a take-over candidate in Fall '94, but instead during October agreed to purchase 13 boats from Oil & Gas for $45 million including the four new 220' boats mentioned earlier. Oil & Gas at this time had an average fleet age of 11 years which was very young for a U.S. fleet with 16 years remaining for depreciation purposes. Hornbeck now ended up with 63 boats in the domestic market plus 23 safety/standby boats in North Sea through their Ravensworth affiliate.[38] Hvide also continued expanding, buying the assets of Popich Bros. of Belle Chasse, LA; Gulf Offshore Marine Inc. of Bayou LaBatre, AL; Tribe Fleet of Panama City, FL and Aleutian Command Partnership of Lafayette, LA. These were mostly crewboats, but Hvide picked up three supply boats from Global Offshore and the *"Aleutian Command*". In October '94, utilization continued to improve with day rates reaching approx. $3,100/day.[39]

Winter 94/95 came and the Gulf of Mexico was still poised on the verge of a construction boom with everyone awaiting utilization and rates to steady before making the leap. General fleet age was starting to cause concern, but refurbished vessels continued to meet the demand except for deep water.

The first quarter '95 rates dipped slightly to $2, 800 – 2,900 a day. It was a soft market for boats.[40] Everyone hoped that it would improve in next few months. Although new construction was still low, the second-hand market continued to percolate – and not just isolated sales of one or two boats. Operators were adjusting fleets to meet their perceived best mix, i.e. Smit selling 4 anchor handlers to Semco, Lamnalco buying two platform supply vessels from Stirling and the operators in the Canadian Arctic continuing to close out their fleets.[41] Hvide also continued to expand with their purchase of seven crew/utility boats from Crewboats Inc. of Chalemette, LA.[42]

Good, second-hand tonnage was still lacking due to the newbuilding "gap" from the mid-80's. In the U.S., even with the average age of supply boats in operation being over 15 years, many Owners thought that it was still better to convert, refurbish and swap around tonnage rather than build new. Considerable sums were spent by most operators on their rebuilding programs as they felt the "break-even" point for new construction was still a year away.[43] Ensco lengthened four 110' utility boats to 140' mini-suppliers and planned upgrades to their *"Kodiak 1"* by adding an impressive million pound line pull winch. One exception to the lack of newbuildings was Edison Chouest's new 260' AHTS being built at North American Shipbuilding at a cost of approx. $15 million for a three year deepwater contract. Late summer with utilization remaining at 90% and boats earning $3,200/day, Seacor completed their purchase of John E. Graham & Sons of Bayou LaBatre for $79.2 million adding 7 supply boats, five mini-suppliers and a whole slew of utility and crewboats to their fleet.[44] In November, OPEC stated that it would roll over its oil production quota of 25.4 MMB/D due to slack world oil demand, rising non-OPEC production and weak prices.[1]

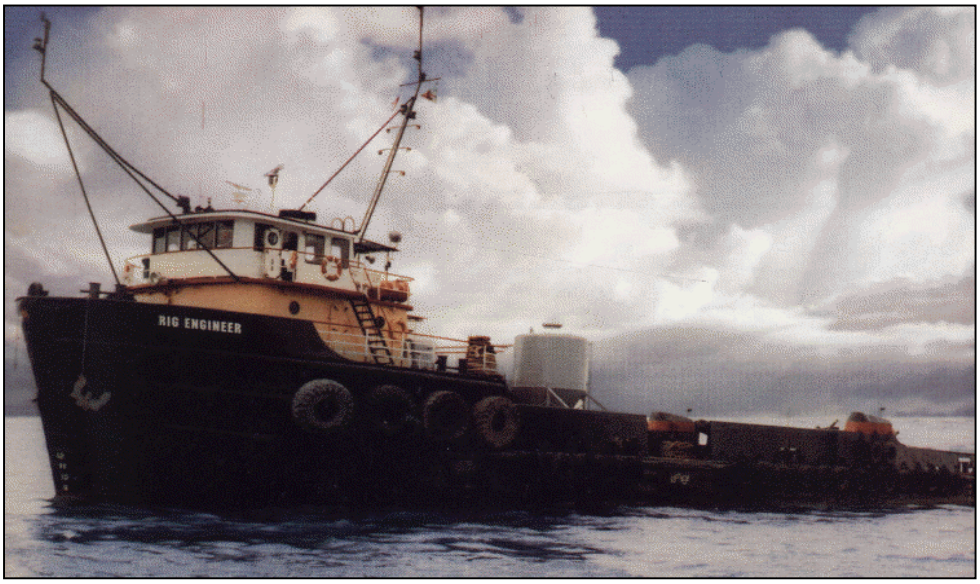
Finally in 1996 we started to see a considerable increase in new vessels entering the market with most being larger, advanced designs for specific charters. Halter picked up a contract for a third 11,000HP anchor handler for the French company SURF followed by contracts for a series of high spec 225' - 255', 140 – 160 ton bollard pull AHTS' from Seacor. Aries ordered two 220' suppliers and Edison Chouest had a total of 20 plus vessels ordered including 165' aluminum high-speed crew/supply boats and hulls intended for seismic at a total of over $300 million spread out over five yards. Leevac began building a 220' boat for Candy Fleet with an option for a second in addition to four 145' crewboats being built for Candy by Swiftships. Expansion continued also in Europe with four ME-909's ordered plus options for two more by Maersk, Solstad ordering another UT-740, Mokster ordering two UT-722's, Farstad ordering one UT-722 and Swire ordering three UT-720's with options for more. Just about every big name in the industry was building or taking delivery of boats – Gulf Offshore, Saevik, Sea Truck, Brovig, DOF, Maersk, Sterling to name a few with virtually all newbuildings supported by long-term contracts for new deepwater operations in the Gulf of Mexico, North Sea, West Africa, Brazil and Newfoundland. In the straight supply boat side of things, Tidewater even contracted for a 205' "research & development" prototype to be built by Halter to help design a new class for the future. It was a good and a hectic time for the yards.

Even with new construction, purchasing of other fleets did not slow down. Tidewater now bought out their largest competitor in the U.S. Gulf – Hornbeck Offshore Services, increasing their fleet to approx. 650 vessels worldwide. Daily rates hit the highest levels in 10 years and in many cases 166' boats were earning the same as 180 footers. Rates were expected to hold firm and values for second-hand offshore supply boats remained high. It was a "Seller's market", if you could even find someone to sell.[45] Hvide still continued to expand with the purchase of three supply boats and other assets of Seal Fleet for $10.1 million increasing Seabulk Offshore's fleet to 60 vessels.[46] After purchasing five vessels in West Africa from their French partner CNN, Seacor was not sitting on the sidelines. In April '96, they signed a letter of intent to purchase the McCall Fleet of 5 utility boats and 36 crewboats operating in the Gulf of Mexico for about $49 million in stock and were reportedly still sitting on an estimated $40 - 45 million in surplus cash.[47]

IPO's gained favor as a means to obtain funds necessary to buy more vessels when Trico Marine in May '96 went public and purchased four supply boats in the Gulf of Mexico. Rates approaching $5,000 a day in the Gulf of Mexico were the best since the 1970's. Boats were bouncing from contract to contract and some charterers held on to boats at the end of a job just to ensure availability for the next.[48] Utilization was close to 100% with some wells reportedly being started without the aid of supply boats.

In October '96, Seacor found a home for some of their surplus cash. They signed an intent to purchase Smit International's offshore supply boat fleet valued at $140.2 million and only weeks later acquired Galaxie Marine Service of Patterson, LA with their fleet of 24 utility, crew and supply boats for $21 million. This now boosted their fleet to over 300 vessels worldwide. In the North Sea, Saevik Supply bought 12 anchor handlers from Viking and both Farstad and Mokster placed orders for two each new UT-722's to be delivered in 1998.[49] Gulf of Mexico rates for supply boats with liquid mud soared to previous unknown levels upwards of $6,500 per day, with anchor handlers earning an extra $2,000/day higher.[50]

As 1997 began, for the first time in many, many years there was an actual boom in the U.S. Gulf for both newbuildings and refurbishing of idle or older vessels with yards racing to supply workers to satisfy contracts. Many yards were committed for well over a year with a typical waiting list of a year or longer before any additional projects could be started. This began an unprecedented search for any U.S. flag tonnage which could go back to work in the "patch" with buyers hoping to beat new vessel prices and delays in launching so they also could take advantage of immediately available high day rates.[51] Years ago I had been asked whether I expected any of the oil rig supply boats we had sold into the Alaskan fishing fleet would ever come back to oil service. I said "never". Well, I learned again that you should never say "never" as in total Marcon sold 6 or 7 boats back. L&M Botruc purchased two ex-Acadian 176' boats which they later stretched, adding bulk and liquid mud. Crowley Marine sold their 4,300HP 165' *"Rig Engineer"* also back to the Gulf.[52] Rates were now approaching $7,500 a day and both Hvide Marine and Otto Candies signed up for newbuildings. Hvide ordered a 205' boat from Halter at approx. $8 million and Candies opted for a 220' x 56' DP version costing region $12 million each with two bow thrusters and two stern thrusters for deepwater work.



Already a giant in the industry, Tidewater Marine grew even larger to about 750 vessels in May 1997 with it's acquisition of Ocean Group's O.I.L., Ltd. 100 boat fleet for about $525 million dollars, taking on $600 million debt to finance the purchase. At the same time their CEO predicted a "mad scramble" over the next two years for offshore support vessels, but advised that they were not looking to move into new construction yet. Another Tidewater hand estimated that they needed about $1,000 a day for each $1 million in construction costs plus 95% utilization over a twenty-five year life of the vessel. Instead they planned to stretch a number of vessels to have 8,000cft bulk, 3,000BBL liquid mud and dynamic positioning.[53] Instead of building, some companies such as Stolt Comex with their purchase of SubSea Offshore and Gulf Offshore's takeover of Brovig Supply in the North Sea continued to concentrate on acquisition of existing fleets. In another major move in May, Hvide pursued their vigorous expansion program by announcing their intent to purchase the 37 vessel foreign fleet of Gulf Marine Maintenance Offshore Service (GMMOS) for $61 million. This fleet, which averaged about 20.5

years of age, consisted of 10 anchor handling supply vessels, 9 anchor handling tugs, 7 crewboats, 4 supply boats, 3 maintenance & construction vessels, 3 utility boats and an accommodations jack-up.

This was followed by Trico's commitment to purchase 12 U.S flag boats including one 225 footer from Otto Candies for $69 million. Both fleets at this time averaged just over 18 years of age and brought Trico's fleet up to a total of 82 including 53 supply boats.[54] Between 50 and 60 vessels of various sizes and types were still on order in the U.S. for companies such as Edison Chouest; Kim Susan, who was just getting back into the market after selling their previous 7 vessel fleet to Trico; Otto Candies, Hvide, Candy Fleet, etc. It was almost a feeding frenzy.

There were literally no second-hand supply or tug supply boats for sale on the U.S. market. A number of boats were even being resurrected and brought back from the Alaskan fishing fleets with Marcon handling the sales of a total of seven 165 – 194' boats back into the "patch". One 192' ex-supply boat hauling containers in Alaska was only listed for three days before being under offer.

The success of this method of expansion definitely depended on the conversion costs to bring a boat back under the new U.S. Coast Guard Subchapter "L" regulations. Some Buyers did well, especially when they recognized what they really had and did not to try to make a "silk purse out of a sow's ear". Others probably ended up spending close to what they could have for a newbuilding and may in the future have a difficult time getting their "book value". This was not just in the U.S. I talked to several foreign owners who admitted that once they got into a project they ended up pouring more and more money into their refurbishing projects than they will ever be able to recoup.

Through '97 day rates around the world continued to strengthen even further and many companies were moving to shorter-term charters, so as to not tie themselves into a lower rate in the buoyant market. In October '97, Trico moved into the North Sea by making an offer of $289 million for Saevik Supply of Norway who operated 17 large vessels averaging 10.4 years of age in the North Sea.[55] Rates in the Gulf of Mexico continued to improve with the standard 180 footer earning $8 - 9,000 with one owner putting a similar boat on at $9,375 per day. A 176' 1970's built boat with no bulk was sold for approx. $2.75 million and was earning and rates of $8,000 per day, while a similar vessel with liquid mud and dry bulk was demanding a price upwards of $4.5 - 5.0 million and daily rates approx. $1,000 higher.[56] Hvide, calling itself the "fastest growing shipping company in the U.S.", also more than doubled its Mid-East fleet by acquiring 30 boats from International Marine Services with an average age of 18 years and 14 from Selat Marine Services out of Sharjah, UAE for a total of $56.5 million. This was followed by their signing agreements to acquire the 36 vessel fleet from the Isle of Jersey based Care Group for $284 million. Most everyone, including Marcon, was predicting the high utilization and charter rates to continue well into 1998 and possibly on for at least five more years. With this in mind, Trico secured a deepwater contract for a new Eastern Shipbuilding 230' supply boat with 10,000cft dry bulk, 3,500BBL liquid mud and dynamic positioning to start mid-98 upon delivery and exercised an option for a second on spec to be marketed internationally.[58]

As 1997 came to a close, OPEC for the first time in four years agreed to increase its production quotas to 27.5 million barrels per day for the first half of 1998, representing a 10% increase.[1] This though was about the same time that Asia was entering a strong recession. South Korean refiners for example cut operations to about 80% of capacity. The demand for oil started to drop.

At the start of 1998, everything was still going good. Many forecast oil to remain steady around at around $15/barrel. The days of wine and roses were continuing. Day rates in the Gulf of Mexico hit an all time record of $9,000 per day and utilization in both the support vessel and rig market was virtually 100%.[59] 1998 was also the year of the mergers, highlighted by the $75.4 billion BP Amoco deal and at the end of the year Exxon and Mobil moving toward an $82 million merger which will create the world's third largest company. In addition to savings and cost efficiencies, a key factor was the re-opening up of the Middle East to foreign oil companies. Consolidation included the $7.7 billion merger of Halliburton and Dresser Industries in February to compete better with Schlumberger This was followed almost immediately by EVI Inc.'s and Weatherford Enterra, Inc.'s $2.6 billion dollar merger. Petroleum Geo-Services acquired Awilco's FPSO biz. Baker-Hughes acquired Western Atlas, multi-billion merger of Transcanada Pipelines and Nova Corp. in Canada. El Paso British Borneo took over Hardy, Talisman took over Arakis, Ocean Energy took over Seagull and where not merging or buying out, they were forging links such as between Petronas / Energy Africa, Devon Energy / Northstar and Kerr McGee / Oryx Energy. Even in Japan, Nippon Oil Company, the country's second largest petroleum distributor and Mitsubishi Oil agreed to merge in April '99.[59] On the supply boat and service side, Stolt Comex purchased Ceanic (formerly American Oilfield Divers) and Pool Energy Services decided to purchase Sea Mar, Inc. of New Iberia, LA with their fleet of 25 boats for a total price estimated at about $109 million. Of the 25 boats, eight 200' supply boats costing about $8.5 million each and two 220' anchor handling boats costing $13.5 million each had been ordered in 1997 from Halter Marine.[60]

Early 1998, newbuildings were either being contracted or delivered at an amazing pace worldwide. Swire Pacific Offshore confirmed an order in for four 5,440BHP UT-719 AHTS vessels to be built at the Imamura Shipyard in Japan worth in excess $55 million with options for four additional vessels to be exercised later in the year.[61] Maersk placed orders with Keppel Singmarine for two additional 272' 18,000HP sister-vessels to the four ordered in 1997 at a cost of $35 – 40 million each plus just took delivery of the 277' "Maersk Boulder" from Simek Shipyard in Norway and put her on a three year contract with Petrobras. Edison Chouest and Sea Mar, Inc. contracted with Ingalls Shipyard to built two each 240' anchor handlers which would be chartered to Rowan for five years. Appledore Shipbuilding out of the U.K. is building two $14 million supply boats for Toisa. Kvaerner Kleven in Norway is building two KMAR 404 AHTS for Torm UK with GulfMark International providing technical and management service. Langsten Baatbyggeri of Norway is building two UT-741's and Govan Shipyard building two UT-745's for Farstad Shipping who is also building to six multi-purpose UT-722's. Mokster is building one AHTS in Chile which has been fixed on an eight year charter offshore Brazil. Sanko Steamship is building four AHTS at Kvaerner Kleven plus six UT-745 PSV's.

GulfMark is having George Prior Engineering in the U.K. finish off a 203' hull bought from Singapore plus contracted with Bender to build two 220' boats. Halter is building two 12,000BHP AHTS for Secunda Marine and approximately 74 other supply boats and anchor handlers are under construction in the Gulf of Mexico. It was a busy time.[62]

In March 1998, OPEC met in Vienna and member countries agreed to voluntarily cut current production levels 1.254 million barrels per day effective April 1st in an attempt to boost oil prices. This was followed in June by an additional cut of 1.355 million barrels per day as oil prices fell to their lowest levels in more than a decade. Together with promises from non-OPEC nations such as Russia, Oman and Mexico, world oil producers pledged to cut production by approximately 3.1 MMB/day including the earlier March cuts.[1] In April day rates slipped to $8,650, but most Owners still were confident about the future. By May we started to hear a little more concern in the Gulf of Mexico as the market continued to soften and rates slid further to $8,300. Mid-June rates fell to $6,000 – 6,500 a day depending on terms and conditions of the contract and people started to have mixed feelings about the market. Asia's economies were still in limbo and there was a fairly bleak outlook for future oil prices in the short to medium term. Most operators though were still profiting at these levels and felt that they could withstand some further rate cuts if necessary.[63]

During the summer and fall of '98, both boat operators and drilling companies started to feel the heat and report lower profits due to the deteriorating conditions in the industry. Daily rates in the U.S. Gulf continued to slide and in October and November were fast approaching or passing break-even levels on employment. Some Owners opted to lay tonnage up and wait it out, rather than fight a battle on rates every day a vessel works. Typical 180' supply boats with liquid mud now were struggling to hold jobs in the $2,800/day range with pressure being exerted to drive this down even further. 166' supply boats which were taking the brunt of the drop on rates and utilization started competing on a equal or lower level with the new generation 140 – 150' utility boats. Just last year at this same time, 166' boats were running neck and neck with the 180' vessels on daily hire rates.[64] Those companies though who had diversified into the stronger international markets were taking advantage of longer contracts at higher rates. International markets for supply and tug supply boats, other than the North Sea, had seen a slow rise in rates during the U.S. Gulf boom period and consequently have not seen the same dramatic drop with the decrease in oil prices.[65]

Even with newbuilding, the average worldwide fleet as of July 1998 was 19.3 years and due to the constant intermingling of international fleets over the previous years, comparing individual company's fleets made more sense than by flag. Following is a breakdown of some major fleets by age from the youngest to oldest:

Analysis of Fleet by Owner / Operator as of July 1998 [7]

Owner/Operator	Total	% Fleet	Avg. Age	Owner/Operator	Total	% Fleet	Avg. Age
Edison Chouest	41	1.2%	6.4	Havila	12	0.4%	15.0
Farstad	20	0.6%	7.8	Western Geo	26	0.8%	15.2
Stirling	12	0.4%	8.4	Geco-Prakla	18	0.5%	16.1
A.P. Moeller	45	1.4%	8.5	Al-Mojil	11	0.3%	16.1
				Trico Marine	65	2.0%	16.3
Solstad	15	0.5%	10.3	Chuan Hup	21	0.6%	16.5
Bumi Armada	11	0.3%	11.2	China Offshore	29	0.9	16.6
Surf	12	0.4%	11.3	Ensco	31	0.9%	16.9
Astromaritima	12	0.4%	11.5	Saudi Aramco	15	0.5	16.9
Eidesvik	12	0.4%	11.9	Seacor Smit	142	4.3%	17.0
Swire	40	1.2%	12.4	Scinicariello S.	18	0.5%	17.9
Atco Port Mgmt.	17	0.5%	12.5	Sea Mar	12	0.4%	18.5
Indian Govt.	50	1.5%	12.6	Tidewater	460	13.9%	18.8
GulfMark	29	0.9%	13.0	Hvide	126	3.8%	18.9
Great Eastern	10	0.3%	13.2	Norsul	14	0.4%	19.2

DSND	12	0.4%	14.4	Maridive	19	0.6%	21.3
Algosaibi Diving	11	0.3%	14.5	L&M Bo-Truc	18	0.5%	22.4
Lamnalco	24	0.7%	14.7	Pertamina	23	0.7%	22.7
				Viking Supply	33	1.0%	25.3
				InterMarine	13	0.4%	25.3
				Boston Putford	21	0.6%	25.7
				Baruna Raya	14	0.4%	25.8
				Mokster	17	0.5%	33.6

Oil prices did not follow the rosy predictions though. Prices fell by one third on average from 1997 levels and even without adjusting for inflation the world oil price in 1998 was the lowest since 1973. The declining oil prices were influenced by an unexpected slowdown in the growth of energy demand worldwide, less than any year since 1990, and increases in supply. The recession in Southeast Asia proved to be more severe than expected and Asian oil requirements fell by about 100,000 barrels per day in absolute terms and by more than a million barrels per day relative to expectations which production was geared at.[66]

In January 1999, OPEC released figures showing that the December 1998 average price for their reference crude oils was down to $9.69 per barrel, down from $11.19 per barrel in November and the second lowest since July 1986 when it reached a record low of $9.04 per barrel.[67] [68] We were still not much closer to a turn-around in service vessel rates with the benchmark 180' boat in the Gulf of Mexico chasing rates around the $3,000 / day level. The shallow water market took the biggest hit and several companies laid up their smaller boats rather than fight for the rates at the bottom of the barrel. In the S+P market, owners are still holding on to their tonnage in hopes of an improvement in the near future.[69]

Although international markets were slower to follow the Gulf of Mexico into the slump, they also began to be hit hard. Utilization in Southeast Asia fell to 75% from 93% just over a year ago and fewer long-term contracts were being offered as oil companies cut back.[70] In the North Sea, after finishing a good year in 1998, Farstad Shipping started to look toward a falling utilization and rates for their vessels as a consequence of the low level in the oil price, the newbuildings coming into play and the oil companies outside of the North Sea such as Brazil, West Africa, Australia and Southeast Asia reducing their exploration activities.[71]

In an effort to raise oil prices, both OPEC and non-OPEC countries agreed to cut oil output by a combined 2.104 million barrels per day for one year starting in April. OPEC's crude oil revenues had fallen 30% to $100 billion during 1998 due mainly to the low oil prices. Arco agreed to be acquired by BP Amoco for $26.6 billion in stock which would create one of the largest oil producers in the U.S. and one of the largest energy companies in the world. Asia started to gradually crawl out of their recession, increasing their oil consumption, for example South Korea's oil consumption rose by 11.5% averaging 2.17 million barrels per day for the first quarter of '99 compared to the same period in 1998.[72]

Oil prices did start to rise slightly, but utilization and rates in the Gulf of Mexico stayed flat. At the end of March, utilization of offshore rigs was 62% compared to 97% a year earlier with rig day rates so low that contractors here also were cold-stacking equipment. Jack-up rigs in the shallow water market took the brunt of the drop, while most semi-submersible units held on. Only about 73% of the 348 boat fleet over 150' were working with many lucky to be just breaking even. Even Tidewater had to cold-stack about a third of its supply boat fleet.[73]

By April, Brent crude hit and exceeded $15/BBL and seemed to be holding steady. A few U.S. flag supply and crewboats began to be offered for sale with price ideas in line with what the market could bear. This was an opportunity for some sellers to dispose of some selected tonnage, investing the income in fleet upgrades or retiring some outstanding debt. There was serious interest from a number of small operators, but regretfully we were still facing a narrow gap between what a buyer was willing to finally pay and a seller's bottom line.

This was probably the closest we have seen to what we felt were reasonable prices for U.S. flag vessels in years, but this window of opportunity only lasted for a period less than 90 days. Most owners still felt "proud" of their equipment and others were just stuck with higher book values, which precluded any extensive sell-off in fear of breaching the dam. Day rates still languished at the $2,100 – 2,300 / day range, although the typically larger and newer vessels in deepwater service faired much better with rates reported in the $6,000/day level.[74]

In June, Brazil began a two day auction of 27 oil exploration blocks, ending the monopoly of Petrobras over exploration and production with most of the blocks being deepwater. Another merger occurred in July when Schlumberger agreed to spin off its offshore drilling operation, Sedco Forex, and merge it with Transocean Offshore, creating the world's largest offshore drilling company. This was followed only a couple months later by the French oil companies Total Fina and Elf Aquiaine agreeing to merge after a lengthy and sometimes acrimonious takeover battle, forming the world's largest oil company.[67]

Rates in the Gulf of Mexico seemed to bottom out in mid-summer at $2,200 - $2,500, although a couple owners reported that they ended up at just under $2.000. Tidewater purchased 6 vessels for a reported $22 million from beleaguered Hvide Marine, who continued to seek economic salvation with last minute efforts to post private bonds. Tidewater also sold off their North Sea stand-by fleet, which was not part of their core business, and is boasting a $100 million cash reserve. Most Gulf Coast operators though are breathing a sigh of relief that they managed to weather the worst of the market this time and are just waiting for things to improve again.

At an August meeting oil ministers from Mexico, Saudi Arabia and Venezuela announced that they will continue to adhere to the oil production cuts through March 2000 followed by OPEC agreeing to this in September despite the fact that crude oil prices had doubled since early 1999.[67] Rates were depressed in the North Sea with some vessels being laid up and a 1986 built 3,590HP platform supply vessel earning only about $3,200 a day.[75] In September '99 oil prices reached a new high of $24/bbl, more than doubling the low of $11/bbl in December the previous year. These higher crude prices were welcomed at the big oil companies such as Exxon, Mobil, Texaco, Chevron and Arco where third quarter earnings increased. Not only helping the individual companies, improving oil prices may even have helped avoid an economic crash in some countries. Norway, for example, was now able to propose a new national budget for next year with a 79.2 billion kroner surplus to be invested as a cushion against the day when their oil production declines.[76] This "high" though has brought little comfort to the North Sea operators who are still affected by an oversupply and starting to lay up boats.[77] Farstad Shipping of Norway reported that utilization during the third quarter fell to 82-84%, down from 89% the first of the year with no signs of improvement throughout the fall and winter season. Three of their AHTS were trading on the spot market during this period and one PSV was laid up. Five of their vessels had periodically been without contracts in Australia and the Far East, but they expected a slight improvement in the fourth quarter. Their activity though in Brazil was still on a high level with seven vessels operating in the area.[78]

As a highly visible indicator of the bottoming-out market, high-flying Hvide Marine in September filed for Chapter 11 bankruptcy protection, which will allow it to continue operations while working on restructuring which it hopes to complete early in 2000. Hvide was able to secure a new $60 million credit facility from its bank syndicate to ensure liquidity and a court hearing in November approved their restructuring bid with a further confirmation hearing scheduled for December 1st.[87] Out of 375 supply and tug supply boats in the U.S. Gulf, 283 were under contract, 88 laid up and 4 were idle. Boat operators were anticipating better utilization and somewhat higher day rates in the neighborhood of $3,000 - $3,500 a day and sometimes up to $9,000 a day for new generation boats as we go into the last quarter of the year.[79] Only problem is they are again worrying about a severe shortage in qualified crews both for rigs and boats – sound familiar? When the market turns around again some boats may have to be laid up not because of lack of work, but because of lack of people.[80] Is there anyway we can learn from history and find a better way of doing things?

Newbuildings continue in the U.S. with as of September shipyard contracts for a total of 23 vessels excluding tugs awarded or under construction including a new 234' PSV for Astromaritima of Brazil being built by Atlantic Marine for an estimated $18 million with delivery 12/99 , two 220-240' boats at Bender for Otto Candies at est. $10.3 million each for September '99 delivery, one 183' Gulfcraft fast crew/supply for McCall/Seacor for 10/99 delivery at abt. $ 4 million, one 220' OSV at Houma Fabricators at US$ 8 million, two 240' OSV's at Leevac for Hornbeck for January 2000 delivery at total $16 million, two 220' OSV's for Candy Fleet at total $20 million for October delivery by Swiftships, fourteen supply and anchor handling tug suppliers at North American for Edison Chouest with deliveries from 12/99 through 5/00 totaling $72.5 million plus contracts pending for seven additional vessels at $119.2 million.[88]

The number of number of supply and tug supply vessels officially on the S+P market worldwide increased by 46 in the past year, but prices being asked and the prices a buyer would pay have not gotten any closer in the last couple of months. Most buyers are not interested in acquiring additional tonnage and invest large sums of money to bring them back into service until day rates stabilize at a reasonable level which will allow cold-stacked vessels to return to work. Some Owners are holding off on quoting any long-term charters for fear of trapping their vessels in at lower rates as the market improves.[81]

The North Sea continues still to lag behind the U.S. in breaking out of the doom and gloom with more vessels going into lay-up. Maersk decided to take work at any price and fixed their 7200HP *"Maersk Feeder"* built in 1993 at only $2,880 per day, Saevik chartered their 1986 built 2,067dwt "Northern Mariner" out at $2,800 a day and Swire's 12,240BHP, 1998 built anchor handler *"Pacific Banner"* was only earning $4,000 a day.[82] [83]

Although North Sea rates in November remained low with for example a 5,450BHP 1998 built PSV committed at $3,200 per day for a cargo run and a 1997 built 12,240HP AHTS working at approx. $5200/day, several companies are taking a positive outlook for the future. Both NFDS and TFDS out of Norway each placed an order for a UT-755 with Brevik Construction for delivery in September 2000 at an estimated $13 - 19.5 million each.[84] Maersk chartered two of their 20,020BHP 1997/8 built and one 16,200BHP 1986 built anchor handlers at $7,600 each per day to move the semi-submersible *"Drill Star"* as average rates for rig moves the previous month hovered around $5,600 a day, down 90% from the October 1998 level of $54,400.[90] As a sign of improvement in the U.S. Gulf, one operator is currently discussing a six month charter of a 170' boat in the $2,800/day range. Mid-November crude hit new highs with Brent at $24.80/BBL as OPEC declared that production quotes would be maintained into the second quarter of 2000.[91]

Average Age Analysis of the Major National Fleets As of July 1999 [85]

	USA	Pan.	UK	Van.	St. V	Nor.	Bah.	Spore	UAE	India
AHTS	17.9	20.3	18.8	19.6	13.1	21.4	20.3	17.2	21.5	25.7
AHT	24.6	22.4	13.1	24.8	18.0	21.7	19.5	17.6	25.3	18.3
Crewboat	19.3	15.4	-	24.3	-	14.3	-	16.0	16.0	20.0
Dive Support	23.1	34.0	15.0	24.2	22.5	36.0	15.7	21.5	-	23.5
Gravel/Stone	-	14.0	-	-	-	-	-	-	-	-
Crane Ship	-	35.0	-	34.0	21.0	-	-	-	-	39.0
Deck Cargo	-	-	-	-	-	-	-	16.9	-	-
Maintenance	37.0	23.1	-	22.8	-	20.0	-	18.3	-	19.3
Mooring	15.0	23.0	18.0	16.2	-	-	-	-	-	-
Multipurpose	-	21.0	11.2	-	6.5	-	18.4	-	-	-
Oilwell Service	19.5	20.0	-	18.0	10.4	-	21.7	-	35.0	22.6
Platform Supply	0.9	17.9	12.7	22.3	8.9	23.0	14.6	24.0	21.0	-
Pipe Layer	-	30.0	-	42.0	-	1.1	17.7	-	-	-
PollutionControl	15.0	30.0	-	-	-	-	-	-	-	-
ROV Support	-	20.2	-	31.0	-	-	15.3	-	32.0	-
Standby/Rescue	19.0	32.0	24.1	28.0	39.8	28.6	22.0	18.4	29.2	-
Supply	17.7	23.3	16.8	20.8	25.3	23.8	24.7	15.1	24.7	21.4
Survey	22.8	20.0	30.9	15.6	12.7	29.6	27.0	25.0	31.2	27.0
Utility/Workboat	14.9	18.5	-	18.7	-	20.0	-	15.4	16.5	21.0
Total	19.0	23.3	17.8	24.2	17.8	21.8	19.7	18.7	25.2	23.8

- Note that Clarkson Research Studies do not seem to follow the U.S. built crewboats or utility boats as closely as foreign or other types of vessels – probably because many are under 100GRT. Barges such as crane, maintenance and pipelay are also not covered.
- Note that other flags of convenience are starting to be used such as Marshall Islands and is not included above.

Analysis of OSV's on Order as of 01 July 1999 by Country of Build [85]

	U.S.	Nor.	Spore	Russia	UK	Japan	Ger.	France	N'lands	Other
AHTS	5	6	9	-	6	7	4	4	1	6
AHT	-	-	-	-	1	-	-	-	-	-
Dive Support	1	-	-	-	-	-	-	-	-	-
Hvy.Deck Cargo	-	-	-	-	-	-	-	-	-	2
Multipurpose	-	2	-	-	-	-	-	-	-	-
Oilwell Service	-	-	-	-	-	-	-	-	1	-
Platform Supply	15	9	-	-	-	-	-	-		3
Pipe Layer	-	-	-	-	-	-	-	-	-	1
Standby/Rescue	-	1	-	10	-	-	-	-	-	-
Supply	16	-	1	-	-	-	-	-	-	-
Survey	-	4	1	-	-	-	-	-	-	1
Utility	1	-	-	-	-	-	-	-	-	-
Total	39	22	11	10	7	7	4	4	3	13

Analysis of Fleet by Owner / Operator as of July 1999 [85]

Owner/Operator	Total	% Fleet	Avg. Age
Edison Chouest	57	1.7%	6.5
A.P. Moeller	45	1.3%	7.8
Farstad	24	0.7%	8.8
Stirling	13	0.4%	9.4
Solstad	16	0.5%	11.3
Astromaritima	12	0.3%	11.5
Surf	12	0.3%	11.9
Bumi Armada	11	0.3%	12.2
Eidesvik	14	0.4%	12.9
GulfMark	28	0.8%	13.2
Swire	41	1.2%	13.3
Indian Govt.	49	1.4%	13.4
Atco Port Mgmt.	17	0.5%	13.5

Owner/Operator	Total	% Fleet	AvgAge
DSND	12	0.3%	15.4
Lamnalco	23	0.7%	15.5
Algosaibi Diving	11	0.3%	15.5
Western Geo	28	0.8%	15.7
Havila	17	0.5%	15.8
Trico Marine	71	2.1%	17.1
Geco-Prakla	18	0.5%	17.1
Saudi Aramco	14	0.4%	17.4
Chuan Hup	21	0.6%	17.5
Seacor Smit	130	3.8%	17.8
Ensco	32	0.9%	18.0
Scinicariello S.	18	0.5%	18.5
China Offshore	15	0.5%	19.1
Sea Mar	13	0.4%	19.3
Hvide	137	4.0%	19.4
Tidewater	465	13.5%	19.6
Norsul	14	0.4%	20.2
Maridive	19	0.6%	22.3
L&M Bo-Truc	18	0.5%	23.4
Pertamina	22	0.6%	23.6
Viking Supply	33	1.0%	25.5
InterMarine	13	0.4%	26.3
Boston Putford	21	0.6%	26.7
Baruna Raya	14	0.4%	26.8
Mokster	18	0.5%	34.5

Analysis of Fleet by Shipbuilder [85]

	AHTS	Supply	AHT	Survey	Stby	Work	PSV	Crew	Dive	Main	Other	Total / % Fleet
Halter	115	199	35	13	5	8	-	15	2	2	12	406 / 11.8%
Burton	33	31	7	8	-	3	-	-	5	1	3	91 / 2.6%
Ulstein	38	-	2	8	-	-	25	-	1	-	5	79 / 2.3%
McDermott	7	24	29	3	-	-	-	-	1	-	-	64 / 1.9%
Quality	33	14	13	-	-	-	-	-	1	1	-	62 / 1.8%
J.G.Hitzler	37	9	-	-	5	-	2	-	1	2	1	57 / 1.7%
American	15	21	1	6	6	1	-	-	1	-	1	52 / 1.5%
Stocz.Szcz.	34	-	-	9	-	-	-	-	-	-	-	43 / 1.3%
Mangone	20	6	5	3	1	1	-	-	3	3	-	42 / 1.2%
So.Ocean	18	8	3	1	-	10	-	-	-	1	1	42 / 1.2%
Moss Pt.	9	23	-	-	-	-	1	-	-	-	7	40 / 1.2%
SingKoon.	6	3	5	6	-	11	-	1	3	3	-	38 / 1.1%
No.Amer.	9	16	-	9	-	-	2	-	1	-	-	37 / 1.1%
Promet	5	14	7	-	-	6	-	-	-	5	-	37 / 1.1%
Maclaren	14	18	-	-	2	-	-	-	-	-	2	36 / 1.0%
J.Pattje	10	8	-	2	11	-	1	-	1	2	-	35 / 1.0%

Expanded list of shipyards with less than 1% of the fleet available from Clarkson Research Studies

Analysis of U.S. OSV Fleet
U.S. Coast Guard Merchant Vessels of the U.S. - June '99

	Reg. Length	Under 100'	100 - 120'	120 - 130'	130 - 140'	140- 150'	150 - 160'	160 - 170'	170 - 180'	180 - 190'	190 - 200'	200' Plus	Total
SubTotal		328	103	27	28	13	70	187	104	37	26	66	989
Avg. Length		69.5'	107.9'	126.4'	132.8'	146.4'	156.2'	166.6'	173.9'	184.7'	196.9'	212.8'	
Avg. BHP		731	1,277	1,553	1,601	1,700	1,981	2,663	3,412	4,096	5,205	4,967	
Avg. Age		1978	1981	1992	1988	1980	1977	1979	1982	1987	1986	1992	

MARCON CREWBOAT MARKET REPORT

	Under30'	30-40'	40-50'	50-60'	60-70'	70-80'	80-90'	90-100'	100-110'	110-120'	120-130'	130'+	Total
January 1997													
Total For Sale	7	10	36	9	11	6	5	2	29	8	1		125
January 1998													
Total For Sale	5	14	24	5	11	5	4	1	11	3	1		84
June 1998													
Total For Sale	1	12	20	8	10	4	3	2	12	6	2		80
October 1998													
Total For Sale	0	13	21	5	8	4	0	2	11	8	2		74
January 1999													
Total For Sale	2	14	25	6	7	4	2	2	11	8	2		83
April 1999													
Total For Sale	1	16	26	8	9	4	2	2	17	11	3		99
July 1999													
Total For Sale	2	17	25	7	8	5	2	2	19	13	3	0	102
October 1999													
Total For Sale	2	21	24	7	6	9	2	2	18	12	3	0	106
Average Age	----	1982	1978	1987	1975	1977	1978	1971	1978	1980	1975	---	
Average BHP	----	370	491	1045	876	1370	2000	2328	1579	1790	2925	----	

MARCON UTILITY BOAT MARKET REPORT

LOA	**20'**	**30'**	**40'**	**50'**	**60'**	**70'**	**80'**	**90'**	**100'**	**110'**	**120'**	**130'**	**Total**
	30'	**40'**	**50'**	**60'**	**70'**	**80'**	**90'**	**100'**	**110'**	**120'**	**130'**	**+**	
April 1997													
Total For Sale	3	4	7	6	3	1	2	3	15	16	7	4	71
January 1998													
Total For Sale	1	3	5	9	1	1	4	6	8	15	5	3	61
June 1998													
Total For Sale	1	3	5	9	3	3	6	5	5	14	8	4	66
January 1999													
Total For Sale	2	3	5	7	1	3	4	6	4	15	8	5	63
April 1999													
Total For Sale	2	3	5	8	1	3	4	7	7	14	9	4	67
August 1999													
Total For Sale	2	3	5	8	3	3	4	7	6	17	9	5	72
October 1999													
Total For Sale	2	3	5	7	1	3	5	5	6	19	8	4	68
Average Age	1954	1993	1978	1988	1981	1990	1984	1977	1973	1980	1981	1974	
Average BHP	**----**	178	282	457	680	850	755	765	764	1112	1451	1353	

MARCON TUG SUPPLY BOAT MARKET REPORT

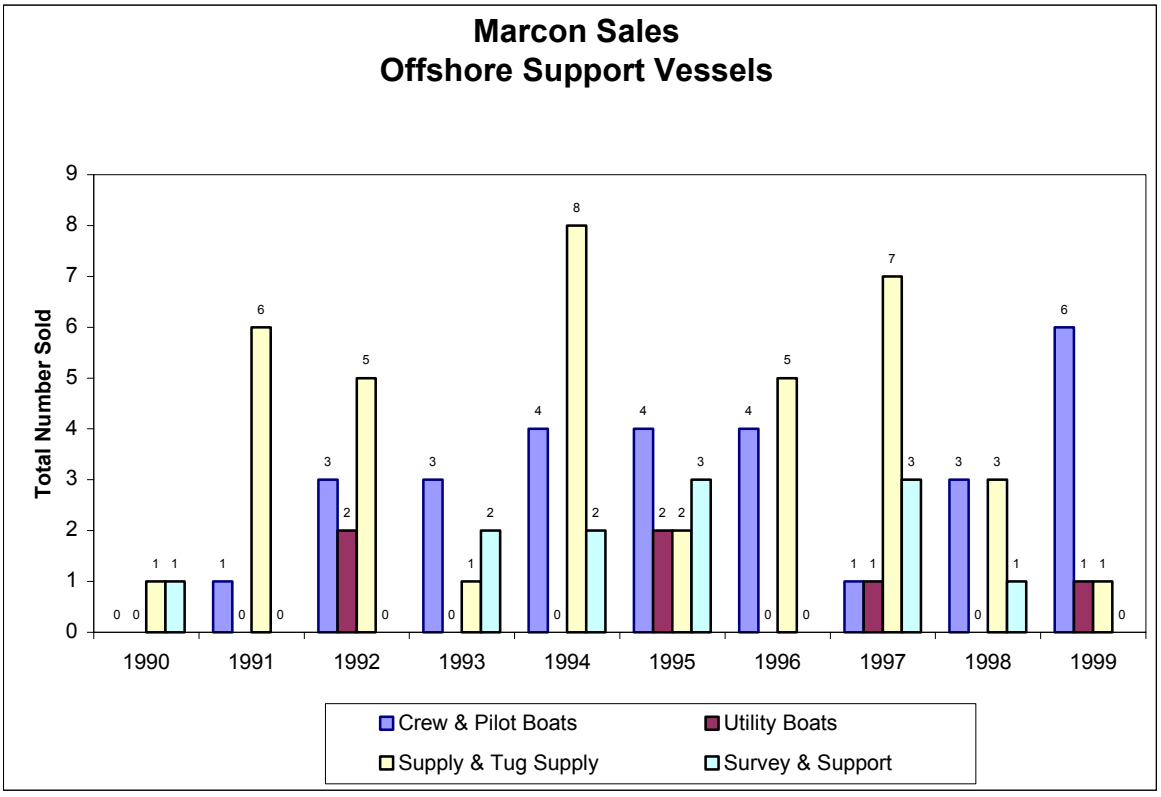
Horsepower	Under 3000	3000 4000	4000 5000	5000 6000	6000 7000	7000 8000	8000 9000	10000 12000	12000 plus	Total
February 1997										
Total for Sale	12	26	19	19	8	14	9	2	2	**110**
January 1998										
Total for Sale	8	20	7	11	6	8	3	0	4	**67**
October 1998										
Total for Sale	5	18	8	5	4	4	4	5	3	**52**
January 1999										
Total for Sale	5	20	9	9	4	5	5	0	2	**59**
April 1999										
Total for Sale	5	19	11	9	5	13	5	0	2	**69**
July 1999										
Total for Sale	6	17	12	11	6	13	7	0	2	**74**
October 1999										
Total for Sale	5	14	13	11	6	13	7	0	2	
Average Age	1973	1974	1975	1982	1981	1978	1979		1980	
Average BHP	1860	3386	4412	5536	6080	7182	8291		13000	

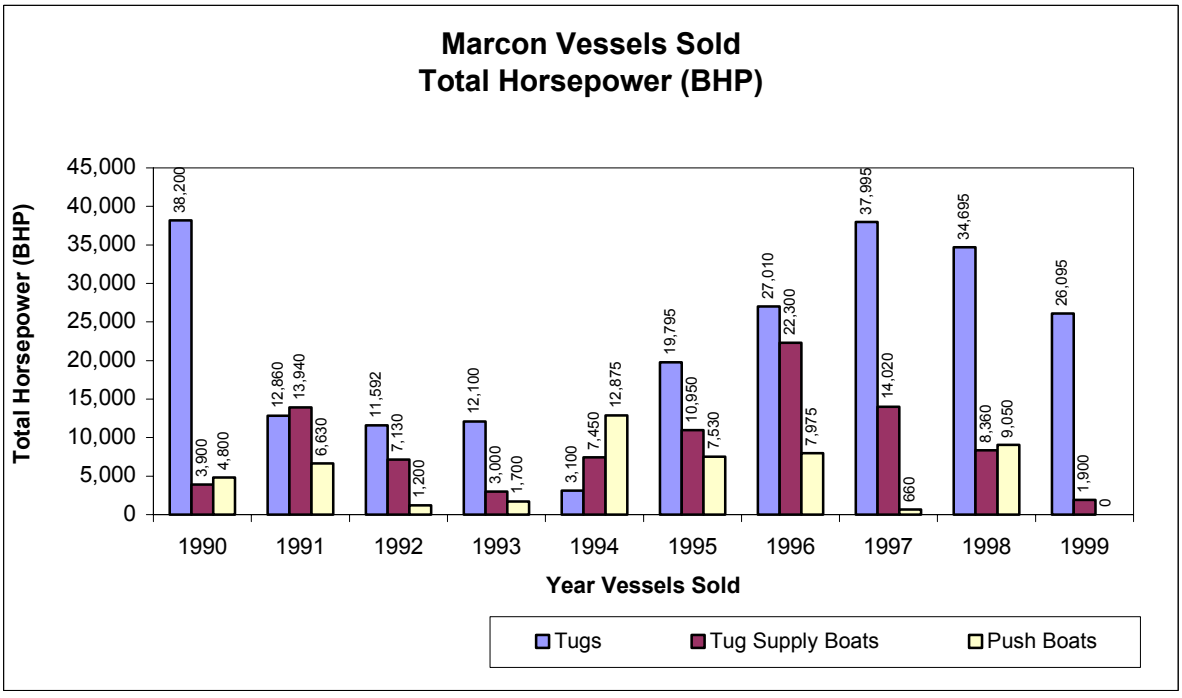
MARCON SUPPLY BOAT MARKET REPORT

LOA	120' 130'	130' 140'	140' 150'	150' 160'	160' 170'	170' 180'	180' 190'	190' 200'	200' Plus	Total
February 1997										
Total for Sale	1	3	3	1	5	7	13	8	6	**29**
January 1998										
Total for Sale	0	1	1	1	7	5	5	0	5	**25**
October 1998										
Total for Sale	0	2	0	2	6	3	7	1	5	**26**
January 1999										
Total for Sale	0	2	0	2	6	5	7	3	6	**31**
April 1999										
Total for Sale	0	1	0	2	9	13	14	2	9	**50**
July 1999										
Total for Sale	0	0	1	2	9	14	16	3	9	**54**
October 1999										
Total for Sale	0	0	2	1	10	14	13	3	10	**53**
Average Age	n/a	n/a	1969	1980	1974	1977	1980	1982	1984	

MARCON TUG MARKET REPORT

Horsepower	Under 1000	1000 2000	2000 3000	3000 4000	4000 5000	5000 6000	6000 7000	7000 8000	8000 9000	9000 Plus	Unk.	Total
March 1996												
Total for Sale	199	163	59	65	18	7	8	7	4	4	16	550
Average Age	1963	1964	1970	1977	1978	1978	1978	1976	1980	N/A	1957	
January 1997												
Total for Sale	178	159	83	65	19	6	9	5	5	2	6	532
January 1998												
Total for Sale	139	142	72	46	14	9	6	6	5	2	2	432
January 1999												
Total for Sale	174	143	83	81	35	10	2	5	5	1	0	536
April 1999												
Total for Sale	187	132	77	85	36	17	2	5	3	1	0	545
July 1999												
Total for Sale	167	141	76	73	27	16	4	4	5	2	0	515
October 1999												
Total for Sale	154	148	78	67	27	15	4	4	7	2	0	506
Average Age	531	1336	2351	3359	4266	5533	6507	7265	8307	12100		
Average HP	1969	1974	1976	1975	1985	1972	1983	1984	1975	1979		


Marcon Sales
Offshore Support Vessels
Total Number Sold
0 0 1 1
1 0 6 0
3 2 5 0
3 0 1 2
4 0 8 2
4 2 2 3
4 0 5 0
1 1 7 3
3 0 3 1
6 1 1 0
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
Crew & Pilot Boats
Utility Boats
Supply & Tug Supply
Survey & Support


Marcon Vessels Sold
Total Horsepower (BHP)
Total Horsepower (BHP)
38,200 3,900 4,800
12,860 13,940 6,630
11,592 7,130 1,200
12,100 3,000 1,700
3,100 7,450 12,875
19,795 10,950 7,530
27,010 22,300 7,975
37,995 14,020 660
34,695 8,360 9,050
26,095 1,900 0
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
Year Vessels Sold
Tugs
Tug Supply Boats
Push Boats

Abbreviations and Conversions

A/H or AH	Anchor Handling
AHTS	Anchor Handling Tug Supply Vessel
PSV	Platform Supply Vessel
ROV	Remote Operated Vehicle
BBL	Barrel equal to 42 U.S. gallons
B/D	Barrels per day
CFT	Cubic Feet
CBM	Cubic Meter equal to 35.314cft
MCF	Thousand Cubic Feet
MMCF	Million Cubic Feet
BCF	Billion Cubic Feet
TCF	Trillion Cubic Feet
LPG	Liquefied Petroleum Gases

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